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# HISTORY OF HAITIAN MEDICINE

ROBERT P. PARSONS

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# HISTORY OF HAITIAN MEDICINE

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# HISTORY OF HAITIAN MEDICINE

BY

ROBERT P. PARSONS

Lieut.-Com., M. C., U. S. N.

FOREWORD BY

EDWARD R. STITT

Rear Admiral, M. C., U. S. N.

WITH 21 ILLUSTRATIONS &
A FOLDING MAP OF HAITI

PAUL B. HOEBER INC

NEW YORK · MCMXXX

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TO THE MOUNTAIN PEASANTS
OF HAITI

Through the centuries of slavery and independence they have suffered many ills and burdens and have laughed through it all. They say that when *le bon Dieu* sends them torments he also provides means of combating the torments.

# PREFACE

This history was written in its original form in January, 1929 and appeared in that form in the May, 1929, number of the Annals of Medical History.

The publication seems to have aroused more interest and comment than was anticipated, and the requests for reprints exceeded the supply for which preparation had been made.

For these reasons, and, perhaps, because of the recent wide publicity Haiti has received in the United States following the political disturbances of last December and the appointment of the Haitian Commission in February, 1930, Mr. Hoeber asked me to elaborate the original form of the history and to bring it up to date.

The opportunity to make such a revision was welcomed by me since it seems now desirable to elaborate on certain points that originally received an improperly small amount

of space and importance, and also because events which have occurred since January, 1929 present some interesting bits of Haitian history which are worthy both of narration and interpretation.

Somehow, the history of Haiti has a lure which is not surpassed by that of many, if any, other countries. Certainly in many of the periods prior to 1804 we find some turbulent times in Haiti, times as turbulent as any in the world's history. During the fifteen year period from 1789 to 1804 the factors at play were so numerous, diverse, intricate, and complex that the picture became kaleidoscopic. There were cross currents of every sort—political, sociological, racial, commercial—all swirling about and all kept in motion by the intrigues set up by the several classes in their several interests. These intrigues varied from the most subtle to the most high-handed. The French Revolution was being felt in all of France's Colonies, but in none of these more

than in Haiti. There was wealth and commerce in Haiti. It reacted sensitively to European disturbances, just as Wall Street with its wealth shows sensitive reactions to political disturbances. Then there was the tense interplay of class feelings; the great passions, longings, hatreds, ambitions, vengeance felt by such different social classes as the poor whites, the white planters, the free blacks, the slave blacks, the mulattoes, the different political factions of whites. All this meant turmoil, blood, struggle—terrors that have not been exceeded in fiction.

After the independence in 1804 came a period just as interesting. It was interesting because it was so bizarre. It made more than a century of real comic opera. The royal courts of the musical comedy were duplicated. The plot of the opera bouffe was strangely reproduced here in real life. Revolutions followed each other in rapid succession, and in general became less bloody and more comical.

Often the retiring president or emperor was given advance notice so that he might be on his way to Jamaica and away from personal danger on the date set for the change in administration. Often he gave advance notice of his abdication so that advance arrangements could be made by all parties concerned.

They were queer people, living in a queer civilization (or a queer lack of civilization) and making some very queer history. Many of the scenes looked like pages from Alice in Wonderland.

Then came the American Occupation in 1915. It changed the whole face of things. But with all its efficiency, its orderliness, the tremendous benefits it brought, its far-reaching improvements, its great modernizing and civilizing influences—there is somehow an unfortunate note in it; it somehow dispelled much of the color, the romance, the glamor, the exotic atmosphere of earlier days. It did to Haiti what the railroads did

to our once wild west. It made life more comfortable, safer, more convenient; but in doing so it removed much of the spice, just as the railroads removed Buffalo Bill and the cow boys and Indians and bad-men. It removed much of the soul of Haiti. It drove the tom-toms and voodoo ceremonies into inaccessible places. Poor Papa Legba and the other dieties became fugitives. They took to the far mountains and to dark secret recesses where they will not be profaned by the eyes and ears of the white man. They can now only feel at complete ease in communities like Trou Cou Cou and Source Badeau which are so remote and so difficult and dangerous to reach that they are never or almost never reached by the white man. There you may see foot prints but not shoe prints. In some of those mountains there live many people, old people, who have never in their lives seen a white face. Some of them have seen a few white faces; some of them have seen Dr. Ekman

in search of rare plants, or William Seabrook in search of folk lore and religious mysteries, or Paul Wilson and one or two others in search of something to gratify an insatiable curiosity—a few white men who cannot help themselves, who cannot resist the urge to explore the souls and the haunts of black people that live openly and proudly with Papa Legba and the Zambies; black people who have lost none of their touch with these spirits, who can still walk and talk with them whenever they wish it, which is most or all of the time.

Many of the city Haitians, even, regret the passage of the good old days when they had their ephemeral governments, their revolutions, their graft, their excitement, their fun, their epidemics, their funerals when everybody got drunk and made all the noise they pleased; when there were no street lights and one could go and come on certain visits and missions without the whole town knowing about it the next morning.

This little story about Haiti is a very special and very small part of the big story. It only follows one little thread, a thread of medical endeavor, but it leads into some strange places and rubs against parts of the larger theme often enough to permit glimpses, at least, of the main drama.

R. P. Parsons.

Washington, D. C.
*May*, 1930.

# FOREWORD

Throughout the history of our acquisition or occupation of tropical lands one great feature stands out which gives us pride and which has brought enormous benefit, comfort, satisfaction to the inhabitants of these countries. This has been the improvement in sanitation, the public health advancement that we have brought to each one of these countries.

In each case the task has been gigantic—the results brilliant. Some of the discoveries and accomplishments have been so monumental that many others, equally meritorious, seem to have almost escaped the world's notice. Thus, the work of the Reed Yellow Fever Commission in Cuba, the work of Gorgas and Kean in Cuba, of Gorgas in Panama, and of Heiser, Freer, Strong, and the Army tropical boards in the Philippines have been so outstanding, that much of the work of the Navy

Medical Department in Guam, Samoa, the Virgin Islands, and in Haiti has not received the recognition that its value has justified.

This achievement is dramatically expressed in the statement of the author of the History of Haitian Medicine that in the short space of ten years an unspeakable hotbed of diseases, from the ravages of which some three million people in Haiti were weakened and crippled, has in a large measure been eradicated.

Almost every one of the rural population in Haiti has suffered from malaria, yaws and intestinal parasite infestations. What a reflection it is on the obstinacy to accepting public health discoveries in many parts of our own country, when we think of the enthusiasm of the Haitians in welcoming the benefits of public health administration.

Medical missionaries have entered countries where blindness from cataract is common; and the widespread restoration of vision they have

brought about has greatly enhanced their reputation among the local populaces, even to the point of giving their services a miraculous aspect. In a similar way the naval medical officers were greatly aided in Haiti. The several hundred successful cataract operations performed by Dr. E. C. Ebert on blind patients coming from all parts of Haiti, besides being very commendable work, made very good propaganda. What seemed equally miraculous to the Haitian natives, and what "opened their eyes" to an equal extent, was the immediate benefit the thousands upon thousands of yaws victims received from the salvarsan and bismuth treatments given them by the American doctors. The propaganda was by deeds, not by words.

There is a tendency to extol the wisdom of the medical writers of the 17th and 18th centuries and Dr. Parsons has given us some of the views of French colonial physicians practising in Haiti in that period. If one is

given to philosophical contemplation, the ideas of Dazille or Pouppé-Desportes may entertain, or if one prefers to read of action let him read Chevalier's laudation of blood letting as a sovereign measure of health promotion.

What Parsons has written of the work of one of the naval medical officers, Dr. Paul Wilson, who was Health Officer of Jacmel, reads like a story of one of our early pioneers. It was Wilson, in 1922, who first grasped the enormous significance of yaws as the physical curse of Haiti; previous medical men, American as well as Haitians, having failed to recognize the untold and far flung misery and crippling incident to this disease—blood brother of European syphilis, if not the same disease modified by age incidence, social environment, and racial difference. When others were discussing and planning hospitals, Wilson insisted that the first need of rural Haiti was soap, salvarsan, and sunshine, and that the good Lord would furnish the sunshine.

A splendid tribute is paid Captain N. T. McLean (M. C.) U. S. N., who organized the National Public Health Service of Haiti. The difficulties he encountered and the opposition he overcame, in establishing an independent service, remind one of the struggles of Gorgas in the administration of sanitation in Panama.

Instead of the few pages, a book might well have been written of the almost unbelievable achievements of Dr. Laning, who combined Health Officer, Physician, Surgeon, and Friend of the People in one. Parsons refers to the veritable bomb shell activity of this Rooseveltian person. When I was visiting Haiti, in 1926, President Borno referred to Laning as one of the best loved Americans who had ever been in Haiti. The sick made pilgrimages from all parts of the island to receive the benefits of his surgical skill. The number of major operations Laning would perform in a single day, under the most unfavorable conditions, was astounding.

Very remarkable is the story of the coordination of every type of medical activity under one head—hospitalization, sanitation, and medical education.

It is possible, that under some single department, or bureau, we might in the United States attain a similar coordination but, at present, such a plan seems visionary. Even in our federal service we have such functions performed by the separate and distinct health services of the Army, Navy, Public Health Service, Veterans' Bureau, Department of Labor, and the Census Bureau, and when one considers the health activities of our 48 states, it would mean coordination of hundreds if not thousands of separate organizations.

I remember when I was in Haiti, four years ago, having a conference with the dean and faculty of the then Medical School of Haiti, and it seemed to me that this group of distinguished Haitian physicians would never be willing to adopt a plan of

medical education based on practical instruction in the hospital wards. They were wedded to the system, so thoroughly discredited by the Carnegie Foundation, which prevailed in our own medical schools thirty years ago—almost completely a course of didactic lectures.

This transfer of the medical school to the Director of Public Health was due to the broad vision of President Borno, the public spiritedness of the Haitian physicians, and to the wholesouled efforts of the Director of Health, Captain C. S. Butler of the Naval Medical Corps.

In passing I may be permitted to refer to the splendid work of the author of this little book in bringing about this coordination. In the Director and in his assistant, Dr. Parsons, were two men who never ceased to labor to bring about pleasant relations with Haitian officials and physicians, and who understood the problems of tropical medicine from first hand experience.

Dr. Butler had had about twenty-five years of intimate contact with health problems in the Philippines, Porto Rico, the Virgin Islands and, while attached to the Fish Commission Steamer Albatross, in the South Sea Islands. As our leading laboratory man he knew the problems of tropical parasitology, and, as the head of our Naval Medical School, he knew the difficulties of practical training in medicine. In Butler and Parsons we had two worthy disciples of Professor Welch in diplomatic dealing with professional or lay groups. Without the help of the Rockefeller Foundation, as manifested in the equipment of the new school, and the training of Haitian physicians in Europe and America, I doubt whether satisfactory results could have been obtained. Much also was due to the sympathetic interest of the late Doctor Richard Pearce, who personally studied the problem of medical education in Haiti.

The further development of the school, and the improvement of the coordination of various health activities, has gone on for the last three years under the very tactful and capable administration of Captain K. C. Melhorn, M. C., U. S. N.

Butler and Melhorn have for years been outstanding men professionally, one a specialist in tropical medicine, the other, one of our leading internists. The idea that men who have devoted their lives to the science and art of medicine disqualify themselves for administrative duties is here refuted.

E. R. Stitt,
Rear Admiral, M. C., U. S. N.

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# HISTORY OF HAITIAN MEDICINE

## I

## INTRODUCTION

IN order to view the history of Haitian medicine with any sort of perspective it is quite necessary to consider first certain factors which have had a profound influence on that history.

The country itself, its geography and climate; the inhabitants with their modes of living, their culture, their racial susceptibilities and immunities to the various diseases; the political history with its effects upon the

prosperity and well-being of the people and upon the opportunities for education and for development in the arts and sciences—all these factors must be kept in mind if we are to form a judgment upon the medical history of a country.

If the prevalence of certain diseases in a country can be included in the scope of its medical history, then the medical history has had in Haiti as great an effect upon the political history as the political has had upon the medical. Just one instance of this is the fact that had yellow fever not been present during the War of Independence, the political changes which occurred in 1804 would either not have occurred at all or would have been delayed for many years. General Le Clerc died of yellow fever, and his ranks were so depleted and demoralized by the disease that the French army in Haiti was virtually defeated by yellow fever, and would have been eventually defeated by it had never a shot been fired on either side.

In a very great many respects, Haiti stands absolutely unique among the nations and countries of the world. With the exception of Liberia, it is the only sovereign state under negro rule. Although only about the size of the state of New Jersey one can find by going to different parts of the island almost any kind of climate or scenery desired. From the lower altitude areas with their tropical heat and gorgeous verdure, or their arid cactus lands (according to the rainfall of the section) one may ascend up through the central plateau lands about Hinche which readily remind the traveller of parts of Wyoming or Montana; and then, still higher, in many of the mountainous regions above 5000 feet, the pine forests and low temperatures could quite possibly make one think of summer days spent in the woods of Alaska or Labrador!

Nowhere in the western hemisphere can one find human life existing in a more primitive state than in many of the rural localities of Haiti. The

general mass of the people are extremely poor, illiterate, underfed, suspicious, superstitious, and sick, and for over a hundred years until 1915 had little chance of contact with what culture there was to be found in the larger towns.

Another respect in which Haiti stands out so prominently is in the annals of preventive medicine and state medicine. Nowhere in history have such tremendous changes and spectacular achievements been brought about in such a short time. In the short space of ten years an unspeakable hotbed of diseases, ranking second to none in the world in downright rottenness, has been transformed into a relatively clean and healthful land which now compares favorably in sanitation with any place in the tropics; and a mass of three million people, sick, suffering beyond all power of words to describe, crippled, and weakened from the ravages of a host of diseases (for the most part preventable and curable), pitifully helpless and

hopelessly resigned to their lot, have, in the mass, in a period of five years not only travelled far on the road to recovery, but have also in a large measure succeeded in eradicating these diseases from their land.

Haiti has served as a laboratory of applied preventive medicine and state medicine. The possibilities in these fields have been demonstrated there in a manner that is nothing short of miraculous. It has also served as a sociological laboratory. There race problems can be studied and solutions tried as nowhere else in the world. The negro has shown there astonishing capabilities in many fields of human endeavor, not the least of which is in medicine. Perhaps the white man has shown him the roads, but he has followed them in a much more admirable fashion than we had expected. Whether he will continue to follow them after the American occupation has been withdrawn remains to be seen.

Almost every one of the great rural populace is afflicted with malaria,

yaws, and intestinal parasites, for which until very recent years they could obtain no medical relief.

The only pretense, even, in the way of treatment for their ills, many of which were African importations, were the witchery and herb concoctions also of African origin. In French colonial days many French doctors, some of whom were in the service of the French emperor, attended the sick slaves as well as the whites. Slaves were valuable property and owners were willing to pay for services that might restore the slaves to working condition, or for measures that would prevent the spread of contagious diseases among them. Since the independence in 1804, in the larger seaport towns, several capable Haitian doctors (and in later years a few German doctors) have resided and practiced, but these men were strictly for a paying clientele, which meant the very few of the elite, and generally speaking, these were the town whites and near whites. These

medical men were certainly not concerned with public health measures in the absence of funds or any other sort of governmental encouragement or support. They were further handicapped in their work by African witch medicine traditions which ramified into the homes of many of the rich and educated town natives and often even into the presidential and royal palaces.

Considering these conditions it little becomes us today to look with any scorn at the medical situation we found in Haiti in 1915. We may here remind ourselves that in the United States where every opportunity for education and every encouragement for scientific development exists, we find flourishing such institutions as our chiropractic and numerous other cults, all of which cure exactly the same conditions by precisely the same mechanisms that hold for the practice of the Haitian voodoo healer.

If the Haitian peasants were reluctant in the first years of American

occupation to accept what the newly formed Public Health Service had to offer, the wonder of it really is that they took it as well as they did. As soon as the Haitian had half a chance to see the value of modern medicine and public health measures, he clamored for it in a way that rather puts us to shame.

But lest we get ahead of our story, let us state here that Haitian medicine falls logically into three principal periods; namely, the French colonial period during the 17th and 18th centuries, the independent period from 1804 to 1915, and the period of American occupation since 1915.

## II

## THE FRENCH COLONIAL PERIOD

Although there was nothing in the way of medical activities prior to the French rule, other things were happening which were later to influence the medical history. With the landing of Columbus at Mole St. Nicolas, December 6, 1492, began the period of exploitation by the Spanish. Within sixty years from that time the Carib Indians had disappeared. Several causes contributed to bring about this disappearance. Many of the Indians were worked to death; many were murdered outright; but the chief cause was smallpox. A virulent epidemic occurred about 1500 and this is said to have killed some 200,000 Indians. Accounts of this epidemic are given by Frédéric Roux,[1] and by Frère Archange[2] who has written also of several later smallpox epidemics in Haiti. Smallpox is one of the few Haitian scourges which was not introduced there from Africa. It is readily

understood how this new disease could decimate the Indians, their immunity to it then being nil.

Stitt[3] has written that:

> Of the exanthemata the one which undoubtedly did more to decimate the aborigines of the New World than all other diseases and warfare combined was smallpox. All evidence attests the introduction of this disease by the whites. The stories we read of the wiping out of whole populations in Mexico and Central America following the Spanish Conquest are connected with smallpox rather than warfare.

This period of search for gold by the Spaniards did not permit any time or thought for the health and comfort of the inhabitants. As the Caribs were rapidly disappearing, and were poorly adapted to the purposes of the Spaniards, African slave importation was soon started.

Under the Spanish governor, Ovando, the first African slaves arrived in 1503. The Spaniards at first looked upon the slave importa-

Fig. 1. Military Barracks at Cap Francois (Cafe Haitien) in French Colonial Period

tions as a rather unwise policy. The slaves did not take kindly to their new life and were accused by the Spaniards of instigating revolts among the Indians. There were sporadic revolts among the negroes, including one on the plantation of Diego Columbus, son of Christopher. But by 1520 the slave trade was progressing in earnest, and by 1790 importations and increases by birth had brought the slave population to a half million. It then outnumbered the whites by 16 to 1.

The slaves came from a wide area of Africa. According to Saint-Méry,[4] they were supplied by African towns all the way from the mouth of the Senegal at 17° north on the West African coast, around the Cape of Good Hope and up the Mozambique at 10° south on the east coast. Not only the coast line but great sections of the interior also furnished them. The slave trade not only brought many new diseases to Haiti, but brought as well the Voodoo methods

of magic medicine to deal with them. In this connection Butler[5] states:

To us who are familiar with the deadly diseases which are found in this immense area of Africa, the wonder is the West Indies and the two Americas came out of the slave trade as well as they did in the matter of disease importations.

It is reasonable to think that during 292 years of slave trade between 1512 and 1804 every type of disease that the continent of Africa might boast of had been brought to Haiti. It is sound medicine also to reason that all African diseases except those requiring vectors not present in Haiti have prospered here. This statement also applies to African types of religious worship (Voodooism). In 1804, accordingly, the Nosology of Haiti, had there been such, would have included all of the diseases that 312 years of European intercourse could contribute, together with what Africa could add during 292 years of slave trade. These two are, of course, to be supplemented by such strictly American contributions as the Caribs could make before they were exterminated.

It seems certain from the writings of Sydenham[6] that yaws came in the slave ships from Africa. His writings were based on actual observations connected with the slave trade. Yaws was then the chief cause of damage to the slave trade, just as now it probably causes more economic loss in Haiti than all the other diseases there combined.

Whether yellow fever was an African importation is doubtful but it is quite possible. According to Hirsch[7] the records regarding yellow fever during the early days of European intercourse with the Western Hemisphere are so defective, and there was such a confounding of yellow fever with bilious remittent malarial fever and black water fever that there can not be any enlightening of the obscurity into which the history of this disease has fallen.

The French settlement of the island began with the arrival of the buccaneers about 1625, and in 1641 LeVasseur was sent by the French govern-

ment to expel the British and to direct the affairs of the colony.

It is difficult to find any records of medical activities or observations during the next hundred years. We know that the country was being rapidly developed, was prospering, and was earning its name of "The Flower of the Antilles." The great power of Louis XIV made for progress and peace in all the French colonies, and in Haiti the agricultural and commercial development was due in great part to the efficiency of the Colonial governors, Bertrand d'Ogeron and his successors, de Pouansey and Du Casse, who had been well chosen to represent the king in this, the richest of French colonies.

The multiplication of slaves was adding to the wealth of the colony. The conditions under which these lived must have resulted in a high morbidity from yaws and malaria.

Judging from the writings of Pouppé-Desportes,[8] tetanus was be-

coming a frequent cause of death, especially among the new born of the slaves, and it was recognized then (1730) that this was due in some way to umbilical infections, or at least that it was in some way associated with a pathology of the cord. Joly Ducoeur[9] thought that tetanus (or "sick jaw," as he also called it) in the new born resulted from "impressions of the air" and advised keeping the babies in tightly closed rooms until they were nine days old. He wrote: "If one exposes them to the air at the moment of birth they get a convulsion of the jaws which prevents them from nursing and from which they die." He gives a classical description of tetanus in adults, and believed that adults contracted it either from too much air, or from being exposed to smoke. He was in decided disagreement with his confreres who thought that the disease in the new born was caused by tying the cord too tightly, and argued that the white babies who were not neg-

lected in regard to care of the cord also frequently had tetanus.

Tetanus has evidently always been a very common disease in Haiti and even today it is not only common among adults but also among the new born.

Under Louis XIV colonial affairs continued to prosper, and in 1697 the treaty of Ryswick ceded to France the Spanish (eastern) part of the island, thus adding greatly to the wealth and importance of the colony.

About 1700, military hospitals were constructed at Cape Haitien, Port au Prince and Aux Cayes, and many doctors in the service of the king were practicing in the larger towns and speculating upon the many new and bizarre diseases encountered.

On the poorer plantations and those further removed from the towns, the slaves were treated for the most part by the ministrations of the witch doctors, just as the diseases of their descendants continued to be treated

until some time after 1915 and to a certain extent even at present.

On the richer plantations there was usually a special building which served as a hospital for the sick slaves. The custom was to put a negress in charge of these sick quarters. She had to be well qualified for the position. She had to have sufficient intelligence to follow the instructions of the surgeon and possess the firmness to make the patients follow the regime prescribed. Those not very sick were often chained to their beds lest their illness be too much of a holiday for them. When they were suspected of feigning illness in order to avoid working, the diet and drugs given them were such as to make them soon prefer to return to the fields.

Those with yaws were never admitted to these small plantation sick quarters, but were either treated in their own huts or in a special yaws building well removed from the other buildings. Increased fees were charged the owners for treatment of yaws cases.

The great prevalence of intestinal worms was well recognized in the early part of the 18th century, not only by the local physicians in Haiti, but by slave owners and the slaves themselves. Ascaris was the principal worm known at that time; the hookworm must have escaped observation on account of its size. A large variety of anthelmintics was used but these were mostly made from native plants which are still used by the peasants today and which we know are of very little value.

Chevalier,[10] writing in 1752, observed many cases of guinea worm (known then as *ver de guinée, dracunculus perearum* and *vena medinensis*), gave accurate descriptions of it, and advised the same method of extraction (that of rolling it up slowly on a stick) that is used today in Africa. The cases seen by Chevalier were probably recent arrivals from Africa, as that worm is not found in Haiti today, life outside the human host being evidently unsuitable for it there.

On many plantations it was the custom to put all the young slave children under the charge of one negress, who bathed them daily, mustered them for meals and inspections, made reports on worm infestations among them and possibly administered the native anthelminthics. Her work also included the removal of chigres from the children's feet. Chigres, known in Haiti as "chique" was probably a strictly new-world parasite, since the word comes from the Carib name "Chego."

Chevalier must have devoted considerable time to the observation of and pondering on the diseases he found in Haiti in the early years of the 18th century. He wrote a series of letters to his confrere, M. de Jean, Regent Doctor of the faculty of medicine at the University of Paris. These letters were published in a small book form in 1752.[10]

Not having the Wassermann and Kahn reaction nor the dark field, he described many conditions which

sound quite clearly to us today as late yaws manifestations, but which he did not recognize as such. His "ankyloses and exotoses" were doubtless mostly late yaws conditions, and it seems most probable that many of his cases of leprosy and scrofula were yaws. It is difficult enough today to distinguish between leprosy and yaws in many cases without the aid of laboratory procedures. The very fact that he did not recognize that yaws was the great Haitian disease makes one suspect that he was misdiagnosing all but the early and typical cases.

One does not know where to place his "maladie de Siam" unless it was a disease that no longer exists in Haiti. He tells us that this strange disease appeared at Martinique after the arrival of a ship from Siam, and that it then spread from Martinique to Haiti. He says that few of the new white arrivals escaped the disease. This would suggest dengue, but he speaks of a high mortality, which would exclude dengue and make

malignant malaria more probable. Epistaxis was a common symptom of the disease, as were also convulsions, delirium, coma, and lethargy. The most logical explanation would seem to be that he was including several conditions under this name, probably dengue, malaria and typhoid, those making early recoveries being dengue and those showing lethargy and fever for several weeks and then recovering being either typhoid or malaria. He noted accurately that enlargements of the spleen and liver were more common among whites than negroes. Wilson[11] and Clark[12] have shown in recent malarial surveys that splenic enlargement occurs relatively very infrequently in Haitian negroes with malaria.

Chevalier[10] found leprosy and scrofula to be equally distributed between whites and blacks and believed that these two diseases were possibly the result of "smallpox passed through many generations from father to son."

What seems most extraordinary and puzzling of all medical practice in those days is that so little cinchona was used. The medical writers of all periods of the 18th century in Haiti mention it but have little to say about it and apparently did not realize its virtues over all the other drugs at their command in the treatment of malaria. Nearly all the case reports in cases where it was used show its decided value, but for some reason they usually preferred a host of other drugs which we know have no therapeutic merit in malaria. Desperriéres[13] has recorded many case histories of what were apparently malaria, but only in one of them he mentions cinchona: "This patient I purged with epsom salts and quinquina, which always produced good results." It must be remembered here that quinine was not put on the market until about 1820. These men in the 18th century would doubtless have recognized its valuable properties and that it was superior to cinchona if it had been

available. The tendency then was always to use a great variety of drugs, and when cinchona was used along with other drugs in the same case, its particular value was of course obscured.

Any sort of intelligent therapeutics or progress in that field of medicine was greatly obstructed by the "doctrine of solidism." For example, Joly Ducoeur's treatment for yaws was "sudorific drinks and dry food." This system of treatment for yaws was evidently based upon the "doctrine of solidism" which was widely accepted by French physicians in the 18th century, and which Rulx Léon[14] writes "was largely used to throw light upon the diseases of tropical countries."

Dazille,[15] who was a major in the Medical corps of the army of Louis XVI, and who served in Haiti, wrote in explanation of the "doctrine of solidism:"

Knowledge of the situation of a country and its products is closely associated with

that of the diseases of its inhabitants; those of a low swampy country have almost always a "loose" affection—from a stasis of the fluids, different kinds of fevers, obstructions, and all the chronic diseases.

On the contrary, the inhabitants of dry arid places, burned by the sun, show the opposite diseases, arising from a thickening of the blood and the dryness and too great action of solids.

Exclusive of the diversity of form, size and color of plants, I think that according to their constituents and properties they can be reduced into two classes—the "moving" remedies and "still" remedies.

In acute diseases where it is necessary to loosen and undo, baths, blood letting, and mild sweet drinks would be the "still" remedies to be employed as long as the violence of the inflammatory symptoms persist.

On the other hand, in chronic diseases, where it is necessary to restore the tone of the fibres by the most active remedies, tonics and the strongest evacuants would be the "moving" medicines indicated.

Pouppé-Desportes,[8] also in the service of the king in Haiti, expressed

his conception of the doctrine in terms which seem equally as ridiculous and difficult to comprehend as those of Dazille:

> Aside from the quality of the air, which is such as the ancients have described, putrefaction, according to physical principles, is brought about and maintained by the difference in food, coarser and less succulent than European food, forming a chyle and thick blood, coating the intestines with sticky material, retarding secretions, and finally causing engorgements and obstructions in the viscera where the circulation is naturally more rapid and the quality changed by work and by debauches.

Another belief which retarded any scientific understanding of the diseases of the country, and which also retarded the patients' recovery from them was the wide practice of bleeding and the high value that the doctors placed upon it. Chevalier even bled himself frequently, not only as treatment but as a prophylactic procedure, and wrote at length on the intricate

technique of when and where and how to bleed.

*Raffraichissants* were quite the vogue just as they are today. Refreshing drinks were considered necessary on a great variety of occasions, especially for the purpose of preventing certain diseases. Lemonade, citronade, orange juice, and pineapple juice were popular as were also emulsions made from almonds and melon seeds. They all had particular occult powers in the field of preventive medicine. It is easy to understand their popularity then and today in Haiti purely as pleasant refreshments, but why a belief in their great medicinal powers has been so persistent and deep-rooted in the mind of the Haitian is another matter.

Cockroach oil, made by the maceration and frying of cockroaches, is another relic which has endured, and for which the few peasants who use it today should not be so greatly ridiculed when we reflect that the white man employed it for wound

dressings in the 18th century. The white Haitian resident today suffers occasionally from the stupidities of his forefathers when he discovers his cook using his frying pans for the preparation of this "antiseptic."

The skin diseases were loosely classified and accordingly their treatment was haphazard. Mercurial rubs were used by some physicians for all skin diseases including smallpox and yaws. The rubs were also used for gonorrhea. Roux[1] was of course just as far off in his term "the syphilitic diseases" as those of more ancient times were with their "the venereal disease." Roux wrote that "syphilitic diseases are endemic in Saint Domingue; . . . Guiac, sassafras and lobelia are as good as mercury and not so dangerous." Mercury was evidently much abused and frequently used in quite toxic doses.

Smallpox and yellow fever were the only diseases which appeared in great epidemic waves. The smallpox epidemics of 1738, 1740 and 1741, have been recorded by Pouppé-

Desportes.[8] Numerous others followed, the last one occurring in 1920. This last one was a great boon to vaccination, which is now made as universal as possible and to which no Haitian will now object.

Yellow fever, which had been absent in epidemic form for many years reappeared in 1794, and every summer thereafter for many years, virtually destroying the French Army in Haiti in 1803.

Yellow fever menaced the French army almost from the time of its arrival in January, 1802, destroying the morale of the troops and constantly depleting the ranks. General Le Clerc, a brother-in-law of Napoleon, who was commander of this army succumbed to the disease in November, 1802. A year later the army under Rochambeau was so ravaged by the disease that it suffered its final defeat at the last strongholds, Cape Haitien and Mole Saint-Nicolas.

Le Clerc had been advised by his medical officers to garrison the troops

at Plaisance and other towns at high altitudes where yellow fever did not exist, but this may not have been consistent with military demands.

The epidemic reached its height at Cape Haitien in May, 1803. The town was thrown into consternation, the hospitals were overflowing and every house was filled with yellow fever stricken soldiers.

The theories of etiology and transmission as well as methods of treatment were absurd in the light of our present knowledge of the disease. It is curious that almost exactly a hundred years later our American troops in Cuba, but a few miles from Haiti, were facing a serious threat of defeat from yellow fever, and the memorable experiments were being performed by Reed, Carroll, Lazear and Agramonte.

During the Haitian yellow fever epidemics, camphor and citrons were the "protectors" against infection. Necklaces of citrons were worn and bags of camphor were carried and

held to the nose when nearing any person or object that might be a source of infection. This tradition has persisted and is widely employed today during epidemics of other diseases. The most recent epidemic was that of meningitis in the mountains of the north in the spring of 1928. In the districts involved all the children wore citron necklaces or belts and many of the adults held camphor inhalers to their noses when approaching strangers or meningitis patients.

During the 1928 meningitis epidemic it was the writer's fortune to explore the trails that wound through La Coup à David, a great valley of the north, where the disease was most prevalent. It was desirable to get all the cases into the hospital at Cape Haitien where they could receive proper treatment, and a house to house canvas in search of cases was being made along these trails. A very large and very black Haitian with huge nostrils acted as guide. He

carried a large camphor inhaler which he could retain very expertly in his nostril without the aid of his hand, even when the horses were going at a rapid gallop. When the trail led into uninhabited districts he dropped the inhaler into his pocket, but it was always replaced in his nostril when a native came into sight. He explained that the inhaler provided much greater protection than the simple camphor bags of his ancestors, and, according to him, the success of the measure depended entirely upon a flawless technic—having the inhaler constantly in place when in the presence of those who might harbor this mysterious and greatly dreaded disease.

The citron necklaces were quite possibly a relic of a preventive measure in use in the earliest historical times. For example, the Mosaic code prescribed a woolen neck band to be worn during epidemics.

Descourtilz,[16] writing about 1800, had many ideas about personal hygiene as protection from yellow fever

and other diseases. He advised against bathing in or frequenting vicinities of stagnant water because of "impurities which are the source of yellow fever by their putrid emanations." He advocated the use of mosquito nets but this was simply because of "the annoyance of mosquitoes, whose bites inflame the skin and disturb the sleep."

He cautioned physicians against entering hospitals without first fortifying themselves against infection by means of a tonic drink. His method of avoiding diarrheas was the use of "moderately spirituous drinks," and the "foregoing of all crudities which engender them." He advised his confreres to "aromatize" with orange branches the places where patients died of malignant fever. The sprinkling of vinegar upon the floor was also practiced.

## III

## PUBLIC HEALTH AND HOSPITAL ADMINISTRATION IN THE 18TH CENTURY

In the matter of public health these men also had their ideas. While we realize that our great grandsons may be highly amused at our present-day writings on little understood diseases, such, for example, as epilepsy and some of the psychoses, we are, despite this fact, none the less entertained by the views of Pouppé-Desportes[8] and Dazille,[15] which in regard to certain public health questions were, after all, in many respects not so far from our present-day conceptions.

Pouppé-Desportes wrote at length about the dangers of residing in mosquito-infected regions and noted that mosquitoes breed in stagnant waters. Dazille[15] also condemned stagnant water and observed the greater incidence of "habitual fevers" in such towns as Petite-Anse and Petit-

Goave which are located near marsh lands and remain today malarial districts. He warned the people against allowing water to stand about their homes and suggested throwing barrels of lime into the marshes in order to "absorb entirely the pestilential gas or acid." He wanted to establish a sick barracks at Dondon for soldiers who fell ill at Cape Haitien and Fort Dauphin where the "situation was vicious not only because of marshes in the vicinity but also because of the bad quality of the drinking water." He commended an officer (M. de Loppinot) for sanitary work done at St Marc in 1783. This officer "with very little means already accomplished much for the health of the inhabitants by filling in low areas which spread infected emanations into the air."

In the first number of the first medical journal ever published in Haiti (1802) a Doctor Delorme, then Chief of the Durand Hospital, mentions several unsanitary conditions existing at Cape Haitien:

1. The cemetery situated at the gate to the city contains 40,000 bodies, space being so limited that 30 to 40 corpses are piled into a grave.

2. The butcher shops are a menace on account of the nitrogen and other gases resulting from decomposition of animal substances.

3. Night soil dumping in great quantity near the dock. The humidity of the night disposes this matter to arise in vapors the next day by the action of the sun, and the wind carries the vapors over the city.

Among sanitary improvements he recommended are:

1. Prohibit the throwing of dead animals in swamps near the city.

2. Fill up certain swamps about the city.

3. Build several latrines at the sea side.

4. Plant trees in certain localities. These will supply oxygen, and shade, and will agitate the air and refresh the city.

5. Evacuate the Hospital of Providence; perfume it, repaint it white before using it for other purposes.

6. Clean the streets and prohibit the throwing of anything in the ditches which will obstruct the current.

Dazille[15] was much concerned about the water in the wells of Cape Haitien. This water was good for cleaning and bleaching on account of the "fixed alkali and the dissolution of silver or mercurial water" but was not good for making soap lather. It had a harsh taste, served poorly for cooking vegetables, and "so weighed on the stomach as to cause many diseases." He "analysed with care" the waters from many parts of Cape Haitien and neighboring mountain villages. From one source the water had "less sediment, was less insipid, and was not so heavy." The water in the mountains was much better, because it was "for the most part rain water and flowed rapidly over stones—by this continual agitation ridding itself of unclean properties and dirt with which it was laden."

At Port au Prince, which became the capital of the colony in 1751, the

water was notably good. Dazille guessed well when he attributed the high quality of Port au Prince water to the fact that it was "conducted by good strong canals from a source far away from the city into fountains in town." He probably judged correctly the Turgeot source to be the best at Port au Prince, as this opinion was confirmed by daily bacteriological analysis more than a hundred years later. A chlorinator, the first one in Haiti, was installed at the Turgeot source in 1927.

## Hospital Administration in the 18th Century

During the latter half of the 18th century there existed many hospitals which were conducted under the entrepreneur system. This was a most unfortunate arrangement except for the entrepreneur. These hospitals were privately owned and were operated purely for profit. Many of the patients were French soldiers who were admitted under a contract arrangement

with the government. The patients were given beds and a little food but next to nothing in the way of treatment or attention to their comfort.

Dazille complained that in these hospitals the dying would often lie in their excrement for twenty-four hours, as they usually were not seen from one morning's visit to the next. He also complained about the large profits being made by the entrepreneurs. These hospitals evidently could not even compare well with the horrible government hospitals which existed during the century of Haitian independence, since the latter, however lacking in other respects, were not maintained primarily for profit. As will be noted later, the government hospitals in the days of independence did provide considerable financial gain for certain officials but this was obtained by devious methods, did not come directly from the patients, and was looked upon as a perquisite. Dessalines, the first

emperor of Haiti, even advised his government officials to "Plumez la poule, mais prenez garde qu'elle ne crie pas."

During Colonial days there also came into existence the hospitals conducted by the Gray Sisters. Through all the turbulent and bloody days, surrounded by every form of greed and corruption, these noble women stood faithful to their high calling and without complaint made every sacrifice. For more than a hundred years these sisters struggled against all obstacles and difficulties to provide nourishment and comfort for the sick under their care.

Dazille[15] said of them in 1785:

> The advantages which should make one prefer them to men in caring for the sick are their gentleness, their patience, their cleanliness, the habits of their sedentary life, their assiduity, their constancy, their devotion, virtues belonging to their sex, the manner in which they have been trained, as well as the vow of their institution.

The order of the Gray Sisters was, and still is, supported by the church. These sisters also conducted many of the girls' schools and today are in charge of the best girls' schools to be found in Haiti. Later, in the days of independence they worked in the government hospitals where they were always handicapped by the meager allowance of the government. Today they are employed in the government hospitals of the Public Health Service at Port au Prince, Cape Haitien and Aux Cayes where they are in charge of such matters as preparation and serving of food, ward management, linen and other supplies, laundry and cleaning work. The Gray Sisters are white French women. Dr. Melhorn, in the annual report of the Public Health Service of Haiti for 1926–1927 pays these sisters a just tribute: "Quiet and self-effacing, these splendid workers represent the perfect type of their high calling. With herculean strength they have stood to their task and

borne their added burdens with loyalty and without complaint."

Another organization, the Blue Sisters of St. Rose de Lima came into existence in Haiti much later, but was and is equally worthy and performs the same work. The Blue Sisters include many negresses and mulatresses as well as white women, all of the highest type. The blackest ones are just as efficient and possess all the splendid finer qualities of the whitest.

The military hospitals in the colonial period were excellent institutions by the standards of their time. They were operated in strict military fashion and were administered under regulations that might remind one of the present-day military hospitals. Rigid rules governed the matters of admissions and discharges, hospital records, case reports, linen supply, diets, etc. The daily ration for patients on the regular diet list in one of these hospitals was 26 ounces of meat, 20 ounces of bread and one bottle of wine.

Surgery was practiced very little, either in or outside the hospitals, not because of the incompetency of the king's doctors, but because of the great frequency of postoperative infections.

## IV

## THE COST OF INDEPENDENCE

The events which led to the revolt of the slaves in 1791, Napoleon's despatch of an army under LeClerc in January, 1802, and the final defeat of that army under Rochambeau in November, 1803, cannot be discussed here.

But it should be recalled in passing, that the great outstanding figure in all this turmoil was Toussaint Louverture, "the first of the Blacks." Born a black slave at Cape Haitien in 1743, he became the leading conspirator against the slavery system and against white rule in Haiti. He became the self-appointed governor of the colony in 1797. He showed great genius in his administration, using his power most effectively for promoting peace, prosperity, order and justice. While governor he was always willing and eager to cooperate amicably with Napoleon and the French government. No greater patriot and national

hero ever lived; no man ever died a more noble martyr. He was betrayed, arrested by surprise, and deported to France in June, 1802. Imprisoned by Napoleon at the Fort de Joux, he died in his cell a year later of cold and hunger.

> Dark Haitian—for the time shall come,
> Yea, even now is nigh—
> When everywhere thy name shall be
> Redeemed from color's infamy;
> And men shall learn to speak of thee
> As one of earth's great spirits, born
> In servitude, and nursed in scorn.
>
> WHITTIER. Toussaint Louverture

Jean Jacques Dessalines, born in Africa, and reared in slavery at Cape Haitien, became the first president of Haiti, and on January 1, 1804, signed the Act of Independence. The same year, following the example of Napoleon, he was crowned emperor, taking the title "Jean Jacques le premier."

When independence arrived, progress ceased. As we measure progress today, and by our standards of civili-

zation, everything stopped with the coronation of Jean Jacques. Worse than that, there was an almost continual decline, not only in medicine but in every phase of civilization until 1915. Jean Jacques hated the whites. He despised even the mulattoes. This color feeling was his ruling passion. A century and a quarter has elapsed since the time of Dessalines, but one can hear children today using an expression in their native patois which shows how they sometimes share the feeling of Jean Jacques: "Dessalines pas vlez oiez blancs." (Dessalines doesn't want to see the whites.)

Dessalines wanted no whites in his empire, and his orders in this matter were most thoroughly executed.

As there were then no native Haitian medical men, one may realize what a blow this was to Haitian medicine. Dessalines wanted no distinctions that had previously applied to the brown and yellow shades. All these were to be considered as blacks. This ruling was resented by many

mulattoes in the southern peninsula and was one of the causes of Dessalines' downfall. On October 17, 1806, he became the first of a long line of murdered rulers of Haiti. Attacked by mulattoes while entering Port au Prince, he fell and was hacked to pieces by the mob.

Henry Christophe, successor to Dessalines, a few months before ascending the throne as Henry I, took frequent trips in the mountains of the north. Vandercook,[17] in his very dramatic account of the life of Christophe, "Black Majesty," describes in most vivid terms the ruins Christophe saw from the mountain eminences during these trips:

> Christophe swept his eyes over the great plains, the hillsides, and the nestling white-washed towns in the gorges. Wherever he looked there was the same drab spectacle. The fields were forests of bramble and weeds, except where they were black from fire. Half the slopes had been raked and pitted by cannon balls and the towns were a confusion of broken

mud walls and thatch that had wanted renewing for a decade. . . . Under the tyranny of Dessalines, the cultivators, discouraged by the unhindered raids of the irregularly paid soldiery, had not thought it worth while to plant. Geometrically trenched fields, the smashing grind of macerators turning cane into sugar, these reminded them of the old days when white men and the hunger of the fertile land were masters. Now, were they not free? And what better thing was there to do with freedom than to sleep the drowsy days away, then dance through the night under the stare of the white moon?

Cape Haitien and the surrounding country were no more promising in appearance. Of these, Vandercook[17] says:

Only a man with an excellent memory could have said which way the streets, now filled with broken bricks and mortar, were supposed to run.

. . . Black sows slept amid the mud and whitened weeds in the shadowy, molding chamber where Pauline and her young groom had slept.

The country presented the same spectacle of sorry disuse. Filthy shacks, three walls of which were mud and the fourth the side of a French planter's ruined mansion, were lost in a scrub jungle of coffee trees, sugar cane, plaintains, and bananas grown ragged and unfruitful from neglect. Over all the region, far flung and once magnificent, hung the rank odor of defeat—a carrion world that stank of wood burned by fire, sodden by rain, then dried by the dead, heavy warmth of the tropic sun.

There was much to do.

When Christophe, the ex-slave, became king, much was done. Christophe was impatient and he had unlimited power. By 1812 his palace, Sans Souci, was completed. It was then said to be the finest mansion in the New World.

He did not possess Dessalines' intense aversion to the whites. Moreover, he realized that his plans for reconstruction in his empire could not be accomplished without the aid and presence of many white men. Commercial treaties were made with the

British, and Englishmen with their wares and stores began to appear at Cape Haitien. Perhaps Christophe had been influenced by his trip to Savannah during the American revolution. He made Dr. Duncan Stewart of Edinburgh his personal physician. M. J. Moor, a mathematician of London, was also attached to the court.

The laws of Christophe provided that sick land tenants be given hospital and medical care at the expense of the landlord. If this was carried out, the medical attention must have been given by English doctors, as the French had not yet begun to return.

Christophe had, besides his own vision of the needs of the empire, the excellent advice of some English attaches to his court. He imported English and American school teachers and began building schools. Vandercook[17] has it that a royal hospital was built and that the king's physician, Dr. Stewart, was named to fill the

chair of anatomy and surgery established at the Royal College. Whether Dr. Stewart really functioned as professor at the college is not known. In any case the arrangement must have been short-lived. Discontent was spreading throughout the kingdom. Too much work and discipline prevailed. Christophe's laws were too irksome. Petion, the mulatto, who was president of the republic in the south was shrewder in his way, and adopted a *laissez faire* policy which was, of course, much more popular among the peasants.

Scarcely had Christophe's great citadel, one of the wonders of the world, been completed, when Christophe was stricken with apoplexy. A few weeks later, (October 8, 1820), just as the conspirators were closing in on him, he committed suicide.

Two years before the death of Christophe, Petion died in office, and was succeeded by the mulatto, Boyer. Christophe's death resulted in the consolidation of the north and south

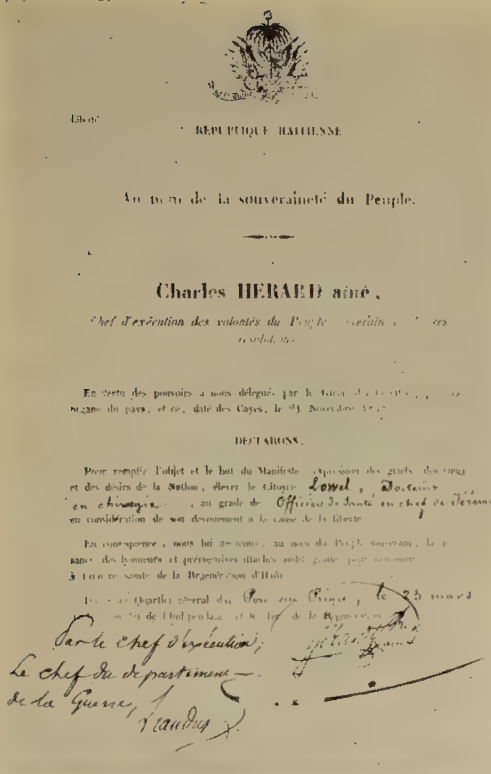
under Boyer's government. Boyer ruled for twenty-five years, the longest tenure known in Haitian history.

Almost nothing can be found in literature concerning medical activities in Haiti during the 19th century after 1804. Hardly a name is recorded of anyone making even a serious pretense to practice according to the European or American methods of the times. Nothing in the way of public sanitation was accomplished or attempted. Occasionally men went to Paris and studied for brief periods and returned to follow what was nearly always a strictly mercenary form of practice. These men often engaged in law practice as well as medicine and frequently devoted the greater part of their time to other commercial pursuits, such as speculations in the coffee market. (Even today it is not uncommon to find a combination doctor-lawyer-coffee broker.) Medical practice was characterized in the main by the basest and most vicious forms of charlatanry.

What were called hospitals were unspeakable.

Payne,[18] in his report to the Rockefeller Foundation, describes four classes of practitioners existing in the latter part of the 19th century: (1) those trained in France; (2) those trained at the local school at Port au Prince; (3) "Officers of Health" of the Army, whose only claim to professional status was based on the commission from one of the presidents; (4) pure charlatans, who were numerous and everywhere. This large fourth class includes several grades, from the suave city fellow who pretended to real medical knowledge, to the small village "docteur feuille" or herb doctor, and the Papa Loi of the mountains whose powers extended beyond those of healing, and embraced matters religious and clairvoyant, supplying all sorts of good fortune to his clients and all manner of adversity to the enemies of his clients.

A medical school was established during the rule of Geffrard in the



Liberté

RÉPUBLIQUE HAITIENNE

Au nom de la souveraineté du Peuple.

Charles HERARD aîné,

Chef d'exécution des volontés du Peuple [illegible]

[illegible]

En vertu des pouvoirs à nous délégués par le Gouvernement [illegible]

DÉCLARONS,

Pour remplir l'objet et le but du Manifeste exposant les griefs des vœux et des désirs de la Nation, élevé le Citoyen Lowel, Docteur en chirurgie [illegible], au grade de Officier de Santé en chef de Jérémie en considération de son dévouement à la cause de la liberté

En conséquence, nous lui reconnaissons, au nom du Peuple souverain, le rang des honneurs et prérogatives attachés audit grade pour en jouir à l'égal de tous les membres de la Régénération d'Haïti

Donné au Quartier général du Cap au Prince, le 25 mars [illegible] de l'Indépendance et du [illegible] de la Régénération

Par le Chef d'exécution;

Le Chef du département de la Guerre,

Vaudin.

FIG. 2. LOWELL'S COMMISSION AS PUBLIC HEALTH OFFICER OF JÉRÉMIE, SIGNED BY PRESIDENT HERARD, 1843.

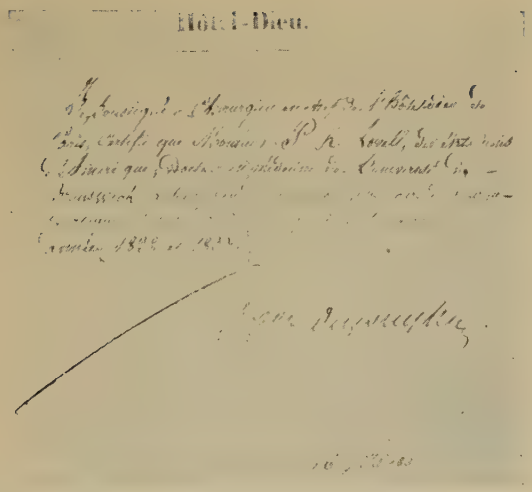



Fig. 3. Lowell's Certificate from Dupuytren, 1833.

sixties. In so far as it pretended to be a serious attempt at medical education it was as farcical as our present-day colleges of chiropractic.

Haiti would have welcomed anything worthy that was offered in the nature of honest scientific medicine, but with little exception nothing was offered during the century. To the credit of Boyer, who ruled long, and for the most part, wisely, he welcomed the arrival of Dr. Porter K. Lowell in Haiti in 1833.

Doctor Lowell was born at Cavendish, Vermont, in 1809. He graduated at Bowdoin College, Maine, in 1832. He doubtless felt the influence of several distinguished men who had graduated from this same college a few years previously. Franklin Pierce had graduated in 1824, and Hawthorne and Longfellow in 1825. Longfellow was Professor of Modern Languages during Lowell's attendance and was his good friend.

Within a short time after his graduation in 1832, Doctor Lowell went to

Haiti. He evidently found the country and climate so much to his liking that he decided to settle there. Before establishing himself in Haiti, however, he left for Paris to do post-graduate work in surgery at the Hôtel-Dieu under Dupuytren, and probably also for the purpose of perfecting himself in French, a great necessity if he was going to practice in Haiti.

The illustrious Baron Dupuytren was then at the height of his meteoric career. That Lowell should be inspired by such a master as Dupuytren is little wonder when one contemplates the caliber of Dupuytren. Today, a hundred years after his death, the medical literature has a good store of references to Dupuytren's contributions to surgery, and the name of this man who had been physician to Louis XVIII and Charles X is still used for designating many surgical conditions and methods first described by him. It is an immense credit to Lowell that Dupuytren became his fast friend

and his correspondent up to Dupuytren's death in 1835.

After a year at Paris, Lowell returned to Haiti and established himself in the pretty little town of Jérémie which he considered a favorable place in which to make his home and practice his profession. His life in Haiti clearly showed the wholesome influence of the association with Dupuytren.

It was a great loss to Haiti and Haitian medicine that Lowell's life in Haiti lasted only twelve short years. He practised at Jérémie in the arrondissement of Grand Anse from 1833 until his death on November 18, 1845. A license to practice medicine issued by the Jury Medical and signed by President Boyer is a matter of record.

That he was a much beloved physician in the district of Jérémie is shown by the extant highly laudatory letters and papers from the citizens of that section, attesting his skill as a physician and his high character as a citizen. He was appointed "Surgeon

General of the Republic" in 1842 and served in this capacity until 1844.

During the presidency of Charles Herard, in 1843, he was appointed Health Officer of the district of Jérémie and administrator of the city hospital. During the period as administrator he accomplished the complete reorganization of this institution. So far as records can be discovered, he was the first health officer to be formally appointed for any part of the Republic.

During the presidency of Philippe Guerrier in 1844 he submitted a scheme for reorganizing the medical teaching along the line of what was in vogue in the United States at that time. He made plans and drawings for a medical school, and specifications were drawn for the equipment of the school. The perennial governmental troubles, however, prevented the realization of his plans. Revolutions were becoming frequent at that time and were proving a serious handicap to medical progress. Boyer

had been deposed and exiled to Jamaica in 1843; Herard (a mulatto) deposed and exiled to Jamaica in 1844; and Philippe Guerrier (a pure black, the constantly drunken "Duc de la Marmelade") died in office, supposedly poisoned, in 1845. Louis Pierrot, the black brother-in-law of Christophe, was deposed in 1846, and Jean Baptiste Riche, a black, died in office in 1847, "the victim," says Frére Archange[2] "of drugs that he took for obtaining a vigor incompatible with his great age."

Not discouraged by the setbacks of these troubled times, Doctor Lowell submitted new plans for the medical education of Haitian students. His scheme was very much like that used today in the new School of Medicine and Pharmacy at Port au Prince. The failure of his high ideals for medical education was caused by the sort of political considerations that have so often operated in other countries to defeat worthy projects.

For political reasons, Lowell was arrested at Aux Cayes in 1844 and placed in prison. There it is thought he contracted tuberculosis which progressed after his release from prison, despite an extended leave in the United States. Shortly after returning to Jérémie from this leave, he died, November 18, 1845. His writings concerned chiefly tropical diseases and surgical questions. One important heritage he has left to Haiti is a great-grandson, Dr. Camille L'herisson, who shows great promise in the future fields of medicine and public health in Haiti. Dr. L'herisson recently completed his internship at the Haitian General Hospital and, after a period of post-graduate work at McGill University, Montreal, became a faculty member at the Haitian National Medical School and a staff member at the Haitian General Hospital.

To realize the sort of task Lowell was undertaking and the difficulties he encountered in his attempt to reorganize the hospital system and

medical education, we must know something of the situation he found in the thirties and forties.

Like many other things in Haiti, hospital and medical school existence was largely "on paper" and the execution of plans was largely in the form of talk. Money actually voted for projects would usually either fail to come forth or would be diverted in great part into various private pockets. In 1808, Petion's government passed a law establishing several hospitals throughout the republic. One of 400 beds at Port au Prince, and one each of 200 beds at Aux Cayes, Jacmel, Jérémie, and Anse à Veau. These hospitals were to serve as schools for the medical personnel of the Army and were to take care of the indigent sick. The regulations governing these hospitals were lengthy and numerous but were only observed when the observance was profitable and convenient to those in power. A hospital school was maintained, after a fashion, at the Port au Prince

hospital. This school taught, according to the regulations "to prepare the ordinary parts of apparatus, to make and apply bandages, to apply blisters, cupping glasses, setons, to open a boil, to extract teeth, to make injections required by certain diseases, to extract foreign bodies, to apply tourniquets, to handle a bistoury and to make cutaneous incisions for blood letting."

In 1820 a commission was appointed to control medical education and for the purpose of putting some order into the practice of medicine. This was one of Boyer's reforms. Licenses were issued without which one could not practice. In 1823 Boyer's government launched a new enterprise by establishing a school of higher learning. It was called the Academy of Haiti and its curriculum included medicine, law, literature and astronomy. This institution was short lived and proved a failure.

In 1838 the hospital school at Port au Prince was "reorganized" and was given the name, "The

National School of Medicine." This never pretended to function as a medical school in the real sense of the term until 1860, when it took on some of the actual appearances of a school, and began to confer degrees in 1870.

Despite the influence of Lowell, and of the very worthy Haitian, Doctor Dehoux, from 1838 to 1860, the school never quite reached the point of being anything very much more than a name. This may well be accounted for by the political upheavals of that period when we recall Boyer's exile in 1843; the rapidly succeeding ephemeral governments of Herard, Guerrier, Pierrot, and Riche; and the "musical comedy" empire, from 1849 to 1859, of Faustin Soulouque (Faustin 1).

After Soulouque had been overthrown and exiled, Haiti enjoyed eight years of the relatively splendid rule of Geffrard, of whom Frère Archange[2] says: "He was one of our best chiefs of state. His government,

entirely progressive, was characterized by many reforms." He reorganized the National Medical School, and founded a school of music, and a law school. Later he even founded a school of painting and one of navigation but these quickly collapsed. In order to elevate the standard of teaching he sent the most promising young Haitian teachers to Europe for special instruction. He established high schools in Port au Prince, Jacmel, and Gonaives, and installed laboratories of physics and chemistry in the high schools of Port au Prince. From all these institutions there began to appear a generation which was known as the intellectual elite.

With the existence of this class, the outcome of Geffrard's reforms, education was becoming fashionable. Since there is nothing quite so dear to the negro heart as the matter of keeping in style, much good came of the movement. The medical students wanted something more than just a degree and a license. An increasing

number considered that they should be taught some medicine.

A certain real progress was made in the medical school, and about 1890 there appeared something quite novel in Haitian medical circles, a scientific spirit in the practice and a scientific outlook on the study of medicine. Several men were doubtless concerned in this renaissance but the outstanding figure was Dr. Léon Audain. Dehoux had been struggling since 1870 to bring about improvements in the medical school and elevation in the standards of practice, but his obstacles were many and he lacked perhaps some of Audian's qualities of leadership.

Audain is responsible for the first accessible records of health conditions in Haiti (under independence). Payne[18] has well summed up the influence of this man on Haitian medicine:

> With unusual insight he gathered around him a group of young physicians and students who were earnest, enthusiastic and intelligent, and with his natural

leadership, developed by his long Paris training, he helped them to the front rank of the Haitian medical profession. By their writings on tropical diseases this group made its presence felt in French medical literature, particularly during the period from 1900 to 1910.

Among their writings were: "Pathologie Intertropicale," by Léon Audain; "Fièvres Intertropicales," by Léon Audain and his collaborators: Charles Mathon, B. Ricot, G. Dalencour, V. Lissade and Paul Salomon; "Hemomicroblastocytes," by Léon Audain; "L'Organisme dans les Infections," by Léon Audain (this work was crowned by the Academy of Medicine of Paris).

This group of men also published *La Lanterne Médicale*, a medical journal appearing every two months from 1899 to 1911. It contained a good deal of solid scientific data, much of which came from Audain's Laboratory of Parasitology and Clinical Bacteriology which he established in Port au Prince in 1905. Not only clinical

matters, but much concerning sanitation occupied the pages of *La Lanterne*. Audain collected mosquitoes and with Mathon identified them and recorded the facts in *La Lanterne*. The group was interested in the prevention of transmissible diseases and *La Lanterne* advised the authorities as to the amelioration of sanitary conditions. Audain stated in an article in *La Lanterne* in 1906 that certain cases seen by him suggested endemic beri beri. This was a keen observation at a time when so little was known about food deficiency diseases, and his ideas about Haitian beri-beri were concurred in many years later by several American observers such as Mann,[19] Payne,[20] and Wickersham.[21]

It is unfortunate that Audain and his group were not more concerned with the National Medical School. Perhaps they felt that that institution, because of its political nature and because of the very unstable condition of Haitian politics, could not derive any permanent benefit from their efforts.

But no matter which way the political wind was blowing, Dehoux stood steadfastly by the school and kept fighting for it. President Geffrard, whose reforms had given so much momentum to educational progress, was unfortunately exiled in 1867, and was succeeded by Salnave, whose interests and thoughts were very far removed from educational matters. When Salnave was deposed and executed in 1870, Dehoux was appointed dean of the medical school by the new president, Nissage-Saget. Even executions may have a silver lining in Haiti. Under Dehoux's administration the school reached the highest development that it was to see for fifty years. Dehoux introduced dissection and operative surgery. He held clinics and recommended the development of various laboratories. A few students were even sent to Paris to complete their medical education.

Again politics interfered and again Dehoux's splendid program was frustrated. The years 1870 to 1879 saw

four presidents in office (Saget, Domingue, Boisrond-Canal and Salomon), the last of whom, Etienne Félicité Salomon, found it politically necessary to remove Doctor Dehoux from his post in 1879. Dehoux was undoubtedly the best medical man Haiti had produced up to the appearance of the Audain group. He had studied many years in Paris and had returned to Haiti to give his country the best he had for her welfare.

Although he was not restored to the deanship, his interest in the school did not flag, and he was a constant agitator in its behalf. In 1888, when the school was separated from the military hospital, he knew better than anyone and felt more keenly than anyone what the school would suffer from the change. He said: "This separation is fatal both to the school and the hospital. If this separation becomes complete, where will the school find material for its clinical teaching which is absolutely essential if the school is to perform its duties?

The hospital, moreover, will suffer by the loss of personnel."

The separation remained in force until 1906 when the promulgation of a new law again brought the school and hospital together. The separation very probably furnished considerable impetus to the Audain clinics, since these became not only popular but very necessary to the students who would otherwise have been deprived of any clinical advantages.

In justice to President Salomon, whose election resulted in the removal of Dehoux as dean, it must be said that he was a well-educated and highly cultured person who worked diligently for the advancement of education in general in Haiti, although political considerations during his administration did cause great damage to the medical school. He had been minister of finance in the empire of Faustin I, and although exiled in 1859 had been greatly feared by the succeeding governments from Geffrard to Boisrond-Canal.

Profiting by his exile, he studied for many years in Europe questions of finance, administration and diplomacy and held the ambassadorial posts at Paris and London. He was responsible for many creditable reforms in national finance and certain progressive movements in commerce, agriculture and industry. In 1887 he organized the first national agricultural exposition, and the special building which was constructed for this purpose became after the exposition the lodgement of the National Medical School, and remained so until the change made under American occupation in 1927. (The building presented a rather sad sight in recent years—the second story was never finished inside and had never been occupied. The lower floor, containing four lecture rooms and a library, was beyond repair owing to the ravages of white ants.)

Salomon gave his hearty support to the primary and secondary schools, supplied them with furniture and

materials for instruction, and arranged for the sending of several professors from France to be employed at the Port au Prince high school.

His nephew, Paul Salomon, became dean of the Medical School in 1910, and has remained on the faculty since, being at present the Professor of Surgery. He has been holding surgical clinics for the students at Saint François de Salles and at the military hospital (now the Haitian General Hospital) since 1910.

Salomon became dean at one of the most unfortunate periods in Haitian history. From 1910 until 1915 the governments and their presidents succeeded each other more rapidly than ever before, and each succeeding one found the country tumbling further down toward anarchy. That brief period saw seven presidents in office, four of whom were deposed by revolution, one was blown up in his palace, one died by poison, and one (Guillaume Sam, the last of the group) was murdered by the mob. As the

medical school is a national institution, one can imagine the difficulties Salomon had in keeping the school together and obtaining government support.

The pay roll called for one dean, fourteen teachers, one secretary, and one janitor. Appointments to these positions were political. The salaries were paid irregularly and in part only. They ranged from $80.00 a month for the dean to $30.00 a month for the teachers, and $4.00 a month for the janitor. The school boasted one microscope in 1915, and laboratory teaching was done by lectures. When the school was taken over by the Public Health Service in 1927 and a large part of the curriculum occupied by actual laboratory work, the "anti-occupationist" doctors set up a great protest about sacrificing so much of the student's time in the comparatively unimportant laboratory.

The hospital was no better off. The Haitian medical profession must not be blamed in great part for these

conditions; they simply were a part of the general picture found in Haiti in 1915.

There remains almost nothing in the way of early records or descriptions of this hospital, but we know in considerable detail what it looked like and how it was conducted when the American occupation arrived in 1915. The first buildings were erected about 1845 during the reign of Faustin I. None of the original buildings remain today. They were of poor construction; some were nothing more than miserable shacks and were condemned and demolished after 1915. A twelve acre plot of ground was the site of two distinct hospitals, each surrounded by high walls. One was a civil institution supported by the commune; the other, a military hospital, was maintained by the national government.

The wards were equipped with but the scantiest of supplies and patients were rarely admitted until about to die. These structures were hospitals

in name only and were unfit for human habitation. The mother provincial, a Gray nun, relates that she often went from government office to office, including that of the President, beseeching funds for the victims submitted to her care. From a long experience of fruitless visits she learned to accomplish best results by posting herself at the front gate of the home of the Minister of the Interior. There she would wait for an audience and occasionally obtain some measure of relief. An old official voucher has been found which covered salary expenditures in the military hospital. According to this the monthly salary of the chief surgeon was $15.00; the remaining eleven doctors and pharmacists at the time were paid accordingly lower.

Where the surgical wards now stand there was in 1915 an old building divided into small stalls, without floors and without beds. It was full of beggars and other sick, many of whom had been wounded in the revolution of 1915. None were being treated and

several were found with maggots in their wounds. The odor was so intense that it was impossible for the American observer to remain in the rooms. Three men were lying dead among the others at the time of one visit.

There were sisters on duty but they had little to work with, and what patients could not get out to beg had to go hungry. An *x*-ray outfit was present, but this did not function and was the personal property of one Doctor Gaveau. Doctor Gaveau had some very decided opinions about the transmission of malaria. He maintained that the mosquito played no rôle in this, and "proved" his point by sleeping in a swamp for three weeks where he was abundantly bitten by mosquitoes and did not develop fever. Whether his blood contained parasites at the end of this period is not known.

## V

## THE FIRST YEARS OF THE AMERICAN OCCUPATION

From the foregoing it is evident that there was much to do. The sanitary problems were no less numerous nor their solution less desperate than were the hospital and clinical aspects of this gigantic task which the Americans faced. The cry was so urgent from all sides that one scarcely knew where to start. A few of the conditions existing in Port au Prince have been described; a dozen other sea ports and scores of inland villages were in equal distress. A consoling thought about this Augean stable was that it was a virgin field in which to apply the knowledge of every branch of medicine, from sanitation to hospital construction and clinical endeavor.

Here was an opportunity to measure the value of such endeavor, a chance as well, perhaps, to see its fruition in the form of brilliant achievement.

What offers the greatest mystery to the present writer, is that prior to the occupation no one seemed to know what the principal problems were or to have any conception of their magnitude. It can be understood why surveys of disease prevalence were not made before 1915 and consequently why the local doctors had very imperfectly formed opinions concerning the incidence of such diseases as hookworm and malaria. Microscopes in use were exceedingly few; no public health laboratory existed, and this may explain why no one appreciated that almost the entire populace was infected with malaria and intestinal parasites.

Even the local Germans seemed to miss the point that fatal typhoid epidemics of serious proportions were visiting Port au Prince at frequent intervals. The unavailability of Widal reactions can hardly account for this. The tendency was to diagnose the comparatively few diseases as a host of different conditions, although ty-

Fig. 4. Dispensary, Jacmel Hospital

phoid and the dysenteries from several causes were then commonly grouped under the vague term "intestinal fever." It is conceivable that the bugbear "typhoid-malaria" was often a reality, and with nothing but symptomatology to go by, this must have added much confusion to the picture.

But the biggest problem of all was the yaws situation, and the most difficult thing to explain is how the local medical men apparently failed to realize how tremendous it was. Lest this seem a bit harsh on the local profession, I hasten to add that the Americans themselves during quite a period did not by any means completely grasp what yaws was doing to Haiti or even appreciate that it was the great medical problem of the land. Not until the arrival of Dr. Paul W. Wilson on the south cost of Haiti in 1922 as Public Health Officer of Jacmel was this fact ever brought out at all clearly.

There was a tradition that may have dated back to even African days

which forbade people with external yaws lesions to enter the towns and villages. The disease was, moreover, always associated with shame, and although everyone had it, they were all loath to admit the fact. The town doctors must either have failed to recognize the cases whose external lesions were healed, or they never visited the rural districts where a little investigation would have revealed untold thousands of cases with the typical skin lesions and the typical deformities.

But Wilson was endowed with an intense curiosity, not only clinical but in this instance concerning everything imaginable that had to do with this strange land and its rich folklore. He loved the mountain trails and the sturdy little horses that carried him over difficult mountain passes with unbelievable expertness and tirelessness. He saw the charm of the Creole language, and of the "mountain nigger" and his life, his laughter, his songs, his dances, and his beliefs. A

Fig. 5. Sisters' Home, Jacmel Hospital

fairly true idea of the yaws incidence could not long escape a person made up on such a pattern.

Wilson went to remote mountain villages where he quickly gained the confidence of the natives who had feared the *blanc*. He poured arsenicals into this seething black mass and saw yaws lesions fade away, not in individual cases, but from a whole mountain side. Without any refined laboratory procedures or elaborate equipment for the injection of arsenicals, he was able to see not that a certain patient was full of yaws but that a certain valley was full of it. At a certain fork of the Gosseline river or at a certain spot on Haut Coq Qui Chant he knew that there were a thousand children with early yaws and that a pack mule could carry enough antiluetic material to change the whole face of the human element of this or that valley or mountain. He knew that the headaches and rheumatic pains and a multitude of bizarre symptoms of most of the

adults were based on old yaws infections, and he knew what a few pounds of postassium iodide could do for a community in this regard.

He communicated his observations to headquarters in Port au Prince and was so insistent and emphatic that the other Americans began to see the point. The program of hospital construction was then well under way, and when consulted about the need of new buildings for the Jacmel institution, Wilson said "What Haiti needs is soap, salvarsan, and sunshine; le bon Dieu furnishes the sunshine."

He wanted to use some of the building fund for the construction of rural dispensaries in remote mountain villages so that the natives there could find all they needed in the way of antiluetics, quinine, and anthelminthics. This was not permitted, but besides drawing the plans and starting the construction of two excellent new buildings at Jacmel, the most beautiful hospital site in Haiti,

Fig. 6. Peasants Awaiting Injection for Yaws at a Rural Clinic.

he managed somehow before leaving Haiti to construct the first rural dispensary (at Colline des Chênes). He also planned for similar constructions at Fond Melon, Bainet, Perido and La Vallée. This was the beginning of the rural clinic program. When Wilson left Haiti in 1925 a Jacmel native expressed in the strongest way known to Haitians, how much the south coast appreciated his services. This man expressed the feeling of a section which extends forty miles back into the mountains of a hundred miles of coast, when he said of Wilson, "He could have started another revolution."

He returned to Haiti a year later, in 1926, as internist for the Haitian General Hospital at Port au Prince. But this work did not offer the opportunities of pioneer days on the south coast, and American "social" and "official" life at Port au Prince, not always free from the sordid intrigues known to such atmospheres, were sorry substitutes for his moun-

tains in the south. Except for the periods when he was engaged in his malaria surveys at Port de Paix,[11] or with his traveling clinic (which he instituted at Marché Lamarque and Ca Juste in the summer of 1929), it is suspected that his thoughts often turned from the business at hand to his beloved Morne La Selle.*

To return to hospital construction, this was begun at Port au Prince even before the organization of the Public Health Service. Shortly after the Marines landed in 1915, Major J. A. Rossell, U. S. Marine Corps, then acting as Intelligence Officer and Public Works Officer of the Marine Brigade, took over the two hospitals in Port au Prince, bought food and other articles for them and

* The highest mountain in Haiti (altitude 10,000 feet); after his two unsuccessful attempts to climb this peak in previous years, this was finally accomplished by Wilson and five friends in February, 1927. For an account of this trip, see Seabrook, W. B. The Magic Island. N. Y., Harcourt Brace, 1928, p. 247.

began construction of the building which is today used for surgical wards and part of which was used for administration until 1924.

In October, 1915, Dr. R. B. Williams arrived as Brigade Surgeon and assumed charge of the two hospitals. He promptly removed the intervening wall. In the following year construction was completed on the surgical wards, operating room, maternity ward, childrens' ward and main kitchens. No construction or other work was then in progress in any of the other towns. The problems met first were those nearest at hand. Consequently the work was at first concentrated in Port au Prince.

## VI

## THE PUBLIC HEALTH SERVICE

In September, 1917, the National Public Health Service of Haiti was organized. Although the treaty between the United States and Haiti, ratified in February, 1916, contained an article which provided for this organization, many obstacles stood in the path of its realization and caused some most unfortunate delays.

The entire work of planning this organization and of launching it and seeing it successfully on its way was performed by Dr. N. T. McLean, Captain, Medical Corps, U. S. Navy. The job was delicate and difficult but Dr. McLean handled it with such diplomatic skill and at the same time with such unswerving and dogged determination that he was able finally to establish the service on a very solid and very desirable kind of basis. He gave it a structure which made of it an efficient and smoothly running machine. For this successful performance

he deserves the highest praise and credit, and has the everlasting gratitude of all the persons who have served in the organization, the gratitude of the Haitian government and the blessing of the Haitian people.

While Dr. McLean was serving as Regimental Surgeon of the Marine Brigade in Haiti during the early months of 1916, Admiral Caperton directed him to look into the part of the treaty then under negotiation which had to do with public health. In April, 1916, Dr. McLean was ordered to Washington to confer with the State Department in regard to this section of the treaty.

He knew that no program of public health in Haiti was possible of development unless it was administered as a separate department of the new government and under the direction of persons experienced in such work. He knew that the problems were of vast magnitude, and that they could not be met without proper funds and personnel and expert direction. He

knew that these would not be forthcoming and that the work would be hampered at every point unless the Service could operate with the same independence and authority held by the public health services of other countries.

But he soon found some strong opposition to his scheme. There were others who either did not realize the truth and importance of his contentions or were led to oppose him through other considerations.

In December, 1916, he again conferred with the State Department, and as a result of this conference received orders to report to the Minister of Public Health at Havana for a study of the Cuban organization and then to assume the office of Director of Public Health in Haiti. This office was to take over from the forces of the Occupation the control of sanitation, hospitals and quarantine.

From January until May, 1917, he held almost daily conferences with the officials in Haiti but could make

Fig. 7. Private Ward, Cape Haitien Hospital.

no headway. He saw that an impasse was gradually being established on all sides of his project. In May he went to Santo Domingo, reported to Admiral Knapp, and explained the situation. The Admiral requested orders for Dr. McLean to confer again with the Navy and State Departments. During July and August a series of these conferences were held. As a result of these, the Secretary of the Navy issued orders which unequivocally placed the control of the public health under the director appointed to the office the previous December. Admiral Knapp went to Port au Prince on August 30th and directed this transfer of control in person. By the middle of September the central office was opened in the Palais de Ministère of the Haitian Government and the Service was in full function. Dr. McLean remained as Director until August, 1920.

Improved methods of handling the sanitary work were quickly inaugurated and by the end of 1918 five

motor trucks and 30 mule carts were in use in Port au Prince for collecting rubbish throughout the city, this being used to fill in the malarial swamp lands along the water front. A marked improvement in the appearance of the city was soon noticed. Similar work and improvement were going on at the same time in the other cities of the Republic.

Progress at first was necessarily slow. Funds and personnel were meager indeed, and the natives, having no idea as to what it was all about, and being ever suspicious and fearful of the white man, did not at once show any great willingness to cooperate. All sorts of traditions served as obstacles. It was very difficult, for example, to find native girls eligible for training as nurses, who would enter such a profession. The caste system was very strict, and girls with high school education who belonged to the better families, could not afford to enter a nurses' school, lest they lose social caste. Manual work

Fig. 8. Men's Ward, *X*-ray, and Eye Clinic Buildings, Cape Haitien Hospital.

of any sort was considered very degrading.

Nevertheless a Training School for Haitian Nurses was established in October, 1918, in connection with the General Hospital at Port au Prince. This was at first conducted by U. S. Navy nurses but as those available were not always able to speak French, these were replaced in July, 1920, by four American Red Cross nurses. This arrangement has functioned very satisfactorily ever since. The nurses' home, which furnishes quarters for about thirty student nurses, was completed in 1922. Ninety nurses have already graduated from this institution and nearly all of these are employed in the various government hospitals. Most of them have proved very capable and reliable and are now rendering valuable services. They are engaged mostly in general nursing and ward management but several are employed in such special duties as *x*-ray and laboratory work, and in public health work, such as school

visiting (for anti-smallpox and anti-typhoid vaccination of school children).

In 1919 it was possible to increase the personnel by six medical officers. This permitted the dividing of the Republic into nine districts, and placing each of these districts under the supervision of a Public Health officer. The principal seaport of each of these nine districts became the location of the district hospital and of the district public health headquarters. In 1924 a redivision was made to include ten districts, thus establishing an inland district around the town of Hinche. The public health officers were U. S. Naval medical officers and each had as an assistant, a pharmacist's mate of the U. S. Navy. The American personnel is now gradually being replaced by Haitians and it is expected that this replacement program will be completed before the expiration of the treaty. Haitian physicians have already assumed entire charge of hospital and sanitary activities in the cities of St. Marc, Jeremie and

Fig. 9. Nurses Home and Training School, Port au Prince.

Port de Paix. They have shown themselves quite equal to the responsibilities of these positions. They receive, of course, the thorough support and cooperation of the central office, which also, incidentally, inspects their work at regular intervals. Whether any changes in the efficiency or integrity of these activities will occur in the complete absence of American supervision is naturally a matter of conjecture. It is the general opinion, however, among Haitians as well as Americans who have been in positions to make observations on this point, that while these Haitians in charge of local activities may be above question in regard to capability or integrity they will be very apt to suffer from a loosening of the structure of the organization, a lack of cooperation from a central office containing no American guidance or the morale and prestige which generally accompany the presence of Americans.

The growth and development of Haiti's Public Health Service, with

the great scope and multiplicity of its activities, today represent the striving and scheming, the tireless and devoted work of hundreds of men, both Haitian and American. Enormous assistance of many kinds has likewise been contributed by the French sisters, brothers and priests. It is unfortunate that several of these personalities and a more detailed account of the aid they gave cannot be touched upon here.

But in all this work there seem to stand out four very conspicuous figures. One of them, Paul Wilson, has already been mentioned. A second one is associated with two epochs of this history. Dr. Kent C. Melhorn, Captain, M.C., U.S.N., first appeared on the scene in April, 1920, remaining until May, 1922. Being one of the Navy's most able clinicians, he was given charge of the General Hospital at Port au Prince. This period was one in which funds were sadly lacking and consequently one in which he was seriously handicapped

Fig. 10. Port de Paix Hospital.

in showing the full scope of his capabilities. There were other and less costly matters than building construction at that time upon which he could release his energy. Port au Prince was a political hotbed and much anti-occupation sentiment was in the air. But despite one's political leaning, one was always glad to have the best that could be found in the way of medical service for himself and family. Dr. Melhorn was the quiet, painstaking, clear thinking clinician who gave everything he had in the way of diagnostic skill to every case that came to him. And then he had a way about him that won the hearts and confidence of all the hospital staff and employees and the thousands of patients that were coming in increasing numbers to the hospital.

A smallpox epidemic was spreading over all of Haiti with fire-like rapidity during one year of his tour, and he rendered particularly brilliant service in handling the situation in Port au Prince.

The high morale his work and his presence brought to the institution was of an immeasurable value, which served well in the years to follow, and which redounded in the facility of his administrative work in the expansion of the service when he returned to Haiti as Director General of the Public Health Service in 1927.

The smallpox epidemic mentioned appeared in September, 1920, and remained until October, 1921. There never had been any attempt of wholesale vaccination and as there had been no smallpox epidemics for several years, almost no one was immune and the disease spread rapidly over the island. (Epidemics of smallpox appeared in Haiti in 1865 and in 1882. The epidemic of 1882 killed more than 3000 persons in Port au Prince.)

Here was a chance to demonstrate something of the value of preventive medicine and incidentally to show the government and the people what a Public Health Service meant to

Fig. 11. Private Ward, General Hospital, Port au Prince.

them. When the natives saw that vaccinated persons did not contract the disease, they clamored for it *en masse* at all the hospitals and rural clinics. It is estimated that nearly a million natives were vaccinated during the year the epidemic lasted. Since that time routine vaccination of all school children has been in force. There are never any objections to this and thousands of adults now apply every year for it at the government clinics. Over 3000 smallpox cases were cared for at the General Hospital in Port au Prince during the epidemic, with a mortality of about 10 per cent. Without the splendid assistance rendered the Public Health Service that year by the Marine Brigade and the Gendarmerie Medical Departments, the situation would have been most difficult. The many courtesies and favors extended by these sister services to the Public Health Service will always be remembered, and the debt of gratitude to them will remain a great one.

In 1922 a special appropriation was made by the Government for the installation of a modern clinical and public health laboratory at the Haitian General Hospital. This has since been bringing most splendid returns. The whole of Haiti, with all its various medical activities, was lacking in this most important aspect of medical and sanitary service. And real progress in our endeavor was not possible until this specialty was established. Laboratory work for every section of the country is now being performed by this laboratory and results are of course most gratifying.

Just at the time when Dr. Melhorn was leaving Haiti in 1922, there arrived on the north coast at Cape Haitien a veritable bomb shell of activity in the shape of the third member of the "conspicuous four" mentioned above. This member of the quartet, Dr. Richard H. Laning (Commander, M.C., U.S.N.), was perhaps the most conspicuous of the group; certainly he was the most spectacular;

Fig. 12. Public Health Laboratory,
Port au Prince.

and the memory of him and his works will live in the hearts of the people of the north for many generations. The Navy Department adheres very strictly to the rule of not leaving an officer on foreign shore duty more than three years. Laning's case was very exceptional, and he was permitted to remain four years (until April, 1926). Cape Haitien is the second city of Haiti, but upon Laning's arrival there as late as 1922, it could boast of what amounted to less than nothing in the way of hospitals or sanitation. Laning proposed that Cape Haitien should have these things; and woe to any obstacle that came in the path of this man and the steam-engine sort of energy with which he pursued his purpose. The following is taken from his first annual report of the Director of the Public Health Service. He is speaking of conditions as he found them at Cape Haitien:

From a sanitary point of view of existing facilities and construction, I

don't imagine that there is a so-called hospital in the world which is worse. The latrine system or lack of system is degrading and disgusting. The kitchen is absolutely unsanitary and hopeless. The building is coming to pieces for lack of funds for its upkeep, cement falling off, foundations eaten away and lumber rotting. The available space for care of patients is so limited that all kinds of cases, surgical and medical, contagious and noncontagious have to be bunked together. Daily dressings amounting to more than a hundred have to be done in tents borrowed from the Marine Corps. The operating room would be unsanitary even as a ward. The laboratory is so small that one can hardly turn around in it. The consultation room is so small that consultations have to be given on the porch. It is in this hospital where many times more surgery has to be done than in any other hospital of the Republic, and where foreigners and natives from the whole Department of the North have to come to be treated.

To account for the fact that "many times more surgery" was being done

FIG. 13. SURGICAL WARDS, HAITIAN GENERAL HOSPITAL.

at Cape Haitien than at the then large General Hospital at Port au Prince:

> If a man preach a better sermon or make a better mouse trap than his neighbor, though he build his house in the woods, the world will make a beaten path to his door.
>
> EMERSON.

Laning's reputation as a surgeon of high skill quickly spread over Haiti and he soon found himself swamped with cases from all parts of the island. To meet this situation he had to have a modern general hospital: buildings, equipment, personnel, organization and funds. But there was no money in sight. Nothing daunted this Rooseveltian person. He talked the Red Cross out of $10,000; he talked the government out of some $40,000; fêtes were given to raise money; private subscriptions poured in from business people at the Cape and from citizens of all classes and races. From Laning's own pocket came no small part of this money. He went to the very limit of his private resources in

this matter. Military regulations, the opinions of military authorities, little niceties in the way of military etiquette cropped up from time to time to hinder or cramp his program. But there was no stopping him. He always managed, somehow, to whisk these annoyances aside, as though they were so many mosquitoes buzzing about his ear.

In his enthusiasm in the construction of this magnificent hospital plant, he never forgot or neglected the thousands of natives in the mountains of the north. He was as indefatigable as the Emperor Christophe had been in these same hills. He often spent his Sundays holding clinics in these mountains. In his youth he had mastered the Japanese language during some years spent in Japan. Now he had mastered Creole, the language of these hills, so he could talk to these folk and know them as they knew him. While in Japan he interested himself in Japanese schistosomiasis, his observations on this condition being quoted

Fig. 14. Dog Catcher's Truck, Aux Cayes.

in many works on tropical medicine today. Just so, he became absorbed in the diseases of Haiti and devoted all the time and thought he could to their study. He could think in terms of pathology and epidemiology as well as he could in the hard financial and engineering terms of hospital construction.

From what has been said about this bustling doctor and his strenuous life at the Cape, one might imagine him a bit arrogant and possessing perhaps a larger than usual share of ego. But this was not the case. He was actually a modest sort, quiet, tolerant, patient whenever there was the least reason for patience, and above all the most approachable person in the world.

He was close to his staff at the hospital, and there was never any race feeling in regard to the Haitian doctors on the staff. He once said to a Haitian doctor, in speaking of the race question, "Men of all colors and races are the same; they all like women, money and rum." (In the

Haitian atmosphere the well known triad underwent very natural changes, "rum" being substituted for "wine," and "money" for "song".)

We may see here how modestly he speaks of accomplishments at the Cape in his annual report to headquarters in 1924:

There have been many improvements at the Justinien Hospital during the past year in buildings, equipment, personnel, etc.; a roomy dispensary has been built and is functioning. Another building with operating rooms, dental room, a suite for eye and ear work, and an *x*-ray room has been finished. A separate kitchen, two wards, and the renovating of the old building are in process of construction. With money from private subscriptions, fêtes, etc., a beautiful structure has been built containing 16 private rooms below and two large and two small dormitories on the second floor to serve for the better class of patients. Also with money obtained from the same sources, a modern *x*-ray equipment has been purchased and installed. A gift of $10,000 has been made by the American Red Cross for the

erection of a surgical ward and preparations are practically completed to commence construction. Much has been done in the way of construction to transform a former almshouse into a modern hospital; much, however, remains to be done: viz., a ward for children, a maternity ward and an isolation building. The grounds should be cleaned up, levelled and drained; roads built and gardens planted.

The program of sanitary improvements about the city of Cape Haitien kept apace with the hospital development and showed the same careful skilful planning. Everything that Laning proposed in this work was accomplished before his departure in 1926. And although the thought never entered his mind that all these beautiful and enormously useful buildings and works would stand as a monument to him, they will remain exactly that; and it is likely that they will still serve as such a monument in the years after they have tumbled into Haiti's already large collection of ruins.

When he left, broken in health and with empty pockets, he looked upon all this as just another mere incident in his busy service career. Like Wilson, he too could have started another revolution.

The years 1924 and 1925 were memorable ones. They were made so almost purely by the presence of certain personalities. Wilson was in the south, Laning in the north; many able and devoted men were carrying on in the other centers. And directing this whole service at headquarters in Port au Prince was the fourth member of our "conspicuous group."

If one views the entire work in a broad way and considers the whole in its effect on the health and living conditions of all parts of the Republic for the future as well as in the present, one cannot escape the conviction that this last member of the group made truly the greatest contribution, and in matters which belong in the annals of Haiti's medical history, he has been that country's greatest benefactor.

This personage was Dr. C. S. Butler, Captain, M.C., U.S.N. He arrived in Haiti in June, 1924, and remained as Director General of the Public Health Service until June, 1927. This sort of work was nothing new to Doctor Butler. He came to Haiti well equipped in the experience of meeting such problems. His background was twenty-five years of service in filling important posts in similar work, and this largely in our tropical island possessions. He was an authority on tropical medicine and on questions of sanitation and public health. He knew mosquitoes; he knew swamps and how to drain them. Most of all, he knew men and understood politics. He was a coordinator and administrator of a high order. He had a knack of reaching out and grabbing for his service the most capable men of the corps that were available. He expected them to work as earnestly and devotedly as he worked. This was a good deal to expect of them but he usually succeeded in this aim. Know-

ing men, he knew that Laning and Wilson should be given all the free rein that the law allowed, and then some. He stood behind the men in his organization to unbelievable limits as long as they were producing; but when they failed to produce through faults of their own he was swift and direct with them. There never were any compromises in his policies.

He interested himself in the general medical and public health problems of the country, decided what and where the greatest needs were, and shaped his program accordingly. He knew that if any impression was to be made on the yaws, malaria and intestinal parasites of three million people in the mountains of Haiti, treatment would have to be brought to them in these mountains; rural dispensaries and clinics would have to be established and made to function in hundreds of localities. If modern medicine was to be introduced in the cities, these cities would have to be given modern hospitals with all the

necessary equipment and properly trained personnel. If the cities were to be rid of malaria and typhoid, extensive and expensive engineering projects, directed at the drainage and filling of swamps, and at the control of city water supplies, would have to be executed. Eternal vigilance on the part of scores of house to house inspectors would become a part of the mosquito control work. He knew that if medicine and sanitation were to continue in Haiti after the occupation, in the hands of Haitians, then Haiti would have to be supplied with a real medical school. This meant a real medical school building, completely equipped; and a school conducted by a Haitian faculty trained at the best medical centers in Europe and America.

For ten years under the American occupation the medical school remained apart from and very much aloof from American influence. Except for the agricultural school, none of the educational institutions had ever

come under any sort of American control or influence. There were many Haitian doctors, not employed in the Public Health Service, who were very active in politics and these were constantly crying out against any American interference in connection with the medical school. They voiced their apprehensions in high flights of oratory, and many fiery editorials on the subject appeared in the newspapers. But no one took this group or their utterings very seriously. The real facts of the case were too apparent and too important. Dr. Butler felt strongly on this question, and the establishment of a real school was his fondest hope, just as it had been the dream of Lowell and Dehoux. He proposed to meet political obstacles with political tools. In his annual report of the Public Health Service in 1925 he said:

What is the future of the medical school in Port au Prince? One thing is certain: it can not retain the same organization as it now has without retro-

grading to a state of more absolute uselessness. It must be improved if it will ever play the rôle in the future development of Haiti that, from the nature of things, it should play. How is this improvement to be brought about? It has been in the hands of the native profession for one hundred years and the final product is hardly an institution to be proud of. The fact remains, however, that it must continue to be a native institution. And it should be one to which the profession could point with real pride. The quickest way to accomplish this is to place the school under the direction of the Public Health Service. Under this direction, with the faculty assured of position as long as worthy of it, a real esprit de corps could be developed in the school, politics could no longer hamper its progress and means could be provided to continue the progress and to establish education on a firm basis.

A new building is essential; real laboratory work should be introduced; the teaching should be improved by employing a certain number of full time men; decent salaries should be given to the teachers.

In placing the school under the Public Health Service, the vast clinical and laboratory material of the Haitian General Hospital could be utilized to the best advantage. The above changes could be placed in operation within a comparatively short time and coupled with a compulsory internship of one year at the Haitian General Hospital it stands to reason that the young graduate so prepared will be much better qualified to practice medicine than is the case at the present time.

At the present time we must be satisfied to develop the school along practical lines and forget the ideal of producing serious thinkers in the science of medicine. For some time to come, the production of *practical physicians* who will be able to take care of the tremendous morbidity of Haiti will be our aim.

The best way to train men to teach such subjects as physiology, chemistry, histology and anatomy is probably through a system of scholarships. It is in this connection that we should like to call upon the Rockefeller Foundation to help us out in training men for this duty.

Dr. Butler worked incessantly on his scheme of getting the medical school under his control and in arousing the interest of the Rockefeller Foundation to investigate the medical needs of Haiti and to help finance the medical school program. In these efforts he attained complete success. Dr. George Payne, and the entomologist, Dr. William A. Hoffman, arrived in Haiti in June, 1924, carried on a survey of public health conditions during a period of a year and a half, and made their report to the Foundation.

This survey had already been planned in 1923 during a conference between General John H. Russell, U.S.M.C., American High Commissioner to Haiti, Dr. J. F. Haynes, Captain, M.C., U.S.N., then Director of the Public Health Service of Haiti, and Dr. H. H. Howard, Director for the West Indies of the International Health Board of the Rockefeller Foundation. Dr. Edwin Peterson, Lieutenant Commander, M.C., U.S.N., was appointed to duty as liaison officer

with the survey. In addition to his work in connection with this survey, Dr. Peterson played a prominent part in all matters of sanitary improvement during his three years of duty in the capacity of assistant to Dr. Butler.

In 1926 Dr. Butler was able to say in his annual report:

> The question of education in medicine and of the teaching of dentistry and pharmacy were properly answered by a law enacted during July, 1926, which provided for the reorganization of these subjects and for the erection of an adequate building to care for each of these important matters. The new law provides that "Beginning August 1st, 1926, the teaching of medicine will be transferred to the Public Health Service section of the Department of the Interior." It has demonstrated the broad-mindedness of his Excellency, the President* of the Republic, who, seeing the great importance of this law to the Haitian people, aided so materially by advice and counsel in its enactment.

*Louis Borno.

The majority of the old teachers have remained with the school in its transfer. Notable among these are Dr. Justin Dominique and Dr. Paul Salomon. The former is dean of the school, the latter is professor of surgery. These two men have given their services to the school for a number of years and have at all times tried to improve its teaching facilities. The entire faculty, made up from members of the Haitian medical profession, has indeed shown a true spirit of cooperation.

In June, 1927, the first group of Haitian fellows of the Rockefeller Foundation left for Europe and the United States. In October, 1927, the newly completed medical school building was dedicated.

During the two years preceding the arrival of Dr. Butler, much was being accomplished at Port au Prince in the matter of construction work on the new buildings of the Haitian General Hospital. Under Dr. J. M. Minter, Captain, M.C., U.S.N., and Dr. Haynes, directors of the Public Health Service during that period, a modern *x*-ray

department was installed and the private ward construction completed (May, 1923), and in the same month the first motor ambulance seen in Haiti was put into use. Also, in this month, the Asile Communal, a poor house, was opened. This removed many of the old incurables from the main hospital which could then be more largely devoted to active service.

In 1924 paved roads were built throughout the hospital grounds, and the outpatient building was completed.

In July, 1927, the new medical wards, the new administration building and the new pharmacy and dental department were opened. In December, 1927, the new kitchen; an elaborate structure which any hospital anywhere could well be proud of, was completed.

In 1927 the program of rural dispensary construction was well under way, many of these dispensaries were completed, and the natives were flocking to them by the thousands.

In the spring of 1926 a serious typhoid epidemic visited Port au Prince, and this returned in even more serious form in the spring of 1927. Anti-typhoid inoculations thus became very popular in 1927 and during the epidemic it was not unusual to have a thousand persons apply for this prophylaxis in one morning at the outpatient department. Antityphoid prophylaxis became just as much a routine part of the public school visits as anti-smallpox vaccination had been. In addition to this work, chlorinators were installed at the sources of Port au Prince water supplies. Since 1927 the typhoid rates at Port au Prince have been as low as those for the best cities of the United States.

Rabies has always been comparatively common in Haiti and until recent years the towns have been overrun by stray dogs that made night hideous and were perhaps a greater menace as causes of insomnia than as carriers of rabies. The service

had a dog license law passed in 1926 and has been ridding the towns of stray dogs ever since. The dog truck in Port au Prince has been disposing of some 3000 dogs per year by means of a painless gas chamber. The Pasteur treatment is given free to all natives in need of it.

## VII

## THE TRAVELING YAWS CLINICS

In 1926 more than 200,000 injections were given in the antiyaws campaign and many indications pointed toward a definite decline in the yaws rates. In that year Butler and Parsons[22] wrote that "... but probably a half million injections a year will be required before the traveler in Haiti can see along the roadsides scenes less appalling than those described by Père Labat 226 years ago in his 'Voyages aux Iles de l'Amerique.'"

By 1927 a striking change had occurred in the general yaws situation. The older lesions were healed or healing and new cases were becoming very scarce. By 1928 primary yaws lesions were so rarely seen at the General Hospital as to cause considerable comment when they did appear. No longer could one travel along rural trails and see and smell on every side the ugly and stinking ulcers. In 1928 rural visitors noted an enormous reduc-

tion in the number of peasants who were walking with a crab-like gait. Crab-yaws of the feet had healed or were healing in the peasant mass in all parts of the republic. The whole yaws picture had undergone great changes.

By 1929 the anti-yaws work had been in active force for four years. Injections were now being given at the rate of more than a half million a year. Early yaws cases could only be found in numbers in the most remote mountain spots.

Wilson was now thinking of the isolated districts where yaws was still prevalent. He believed that the time had come for doing what he called "some wiping up." In April, 1929, he addressed the third annual congress of the Haitian Medical Society with a paper entitled "The Frontal Attack on Yaws—a Plea for a Change in Strategy."[23] He compared the strategy of a public health service to that of an army, and after listing several analogies, pointed out that "There is but

FIG. 15. ARRIVAL OF MEDICAL SUPPLIES, TRAVELING CLINIC.

one essential difference between the two—in the war waged by the Public Health Service there is never any armistice, not even a truce for a few hours."

He said:

The time is now ripe to deliver the coup de grâce to the yaws pandemic. My reasons for urging especial and extraordinary attention to yaws at this time are as follows: First. The time is propitious because of the work already done which has prepared the way for the "wiping up." Second. The successful elimination of yaws from Haiti would greatly increase the confidence of the people and facilitate later educational work. Third. Yaws is still a cause of great economic loss, and while it is believed that no small progress has been made, yet we will have it always with us unless it is eradicated from the more isolated districts and thus prevent contamination of districts that have already been cleaned. Fourth. Ninety per cent of the people live in the country districts and are open to infection. Fifth. The yaws pandemic is the only public health prob-

lem which can be solved within a relatively short time. . . .

All authorities agree that intensive and widespread mass treatment is by far the most efficient and economical method of combating and eventually eradicating this disease . . . Yaws is essentially an epidemic disease and the question of treatment should be looked upon perhaps more as a public health measure than as a matter strictly in the field of therapeutics, since treatment must be directed more at the mass than at the individual, and results obtained may be measured more in terms of the decrease of incidence than in the healing of certain lesions.

He argued that since patients in the early infectious period, because of the shame attached to the disease and the ease of recognition of cases in this stage, would not go far from their own neighborhoods for treatment, the treatment would have to be brought to them in each of these neighborhoods. Since it would be impossible to build or operate a dispensary in each small community,

Fig. 16. Tent Set up, Haitien and Clinic Flags Flying, Traveling Clinic.

he advocated the organization of a traveling clinic unit which could visit these spots periodically. He held that the unit could remain in one region until all the infectious cases had been treated, and then move on to the adjacent neighborhood and so on until all these isolated spots had been covered.

He urged that such a unit be placed in the field at once. The equipment needed would consist of a tent, a cook, a few pack mules, and a couple of healthy doctors. He could not refrain from closing his paper with a touch of sentiment: "I wish to add that in all my years of civil and Navy practice I personally have never experienced as much satisfaction in results as I did over the work done in attempting to eradicate yaws from the arrondissement of Jacmel."

Immediately following the close of the congress Dr. Melhorn conferred with Wilson and gave him the necessary equipment, personnel, pack animals, etc.

On May 1, 1929, the unit left to tour the Morne La Selle Range and valleys. They had a fine outfit. There were some Haitian helpers and animal tenders, a Chinese cook, Wilson, and two other doctors—Dr. Maurice Mathis, U. S. Navy, who talked little, worked incessantly, loved the mountains, and had made a splendid name in his work at Aux Cayes; and Dr. Camille L'herisson, said to be the most promising of the younger Haitians. They stayed in the mountains until the autumn rains came to stop all mountain travel for the season. The terrain made for slow travel and Mathis and Wilson called the outfit the "crawling clinic." They treated all comers—malaria, worms, rotten teeth, etc.—but they concentrated on yaws. It was something new to the natives of these parts and the attendance at first only averaged a few dozen a day. But news has a way of spreading from one mountain to another in Haiti and before long they were treating nearly

FIG. 17. PATIENTS CLIMBING MOUNTAIN TRAIL ON WAY TO TRAVELING CLINIC.

a thousand a day. They toured in the regions of Caford, Marché Lamarque, and Ca Juste.

The traveling clinic became a permanent institution and supplied a long needed link in the present chain of 142 rural dispensaries. The work is aided greatly by the Marine Corps aviators who fly over the camp twice a week to drop food and mail and to exchange signal messages.

To this writer, the yaws work stands out as the most glowing chapter of all Haitian medicine. This is not only because of its tremendous accomplishments for the human and economic betterment of Haiti. It has contributed something else that reaches far beyond the confines of the little republic. A great number of scientific observations on the many aspects of the yaws question have been made during this work. These observations have gone into the medical literature of America and France and have been abstracted by the medical press of every country. They

have brought knowledge and understanding on many points of the problem where formerly there was obscurity and uncertainty. These observations removed a great many fallacies based on faulty and inadequate observations with defective interpretations which had been perpetuated through several generations of textbooks.

The observations in Haiti have concerned chiefly the epidemiology, etiology and pathology of yaws. Wilson and Mathis[24] showed rather conclusively that in Haiti the disease is transmitted from one child to another through the bite of a small gnat, *Hippelates flavipes* Loew. The accumulation of clinical records, and of autopsy records including both gross and microscopic pathology on yaws cases has served to remove, one after another, all the differences which were once thought to exist between the pathology of yaws and syphilis. These observations have shown that yaws is capable of producing and does pro-

Fig. 18. Patients Entering Traveling Clinic Tent.

duce all the pathological changes caused by syphilis. The only exception to this rule is in the non-production of tabes or paresis, but this can scarcely be considered an exception in Haiti since syphilis also is incapable of producing paresis or tabes in Haiti.

While there are distinct epidemiological differences between the two conditions, yaws being a strictly rural, epidemic, non-venereal disease having its onset in young children, in contrast with the essentially venereal, adult and city condition, the two are indistinguishable after the disease has existed in a patient for a few weeks, and to avoid much confusion the American doctors in Haiti struck upon the term "treponematosis" to cover both syphilis and yaws.

And out of Haiti has come the greater part of the evidence which supports the view that the two diseases are identical except that they are operating under very different conditions. The controversy over the question of duality or identity of yaws

and syphilis has been in progress for many years, but it appears now that the bulk of the evidence supports the idea of identity.

The points of the controversy cannot be discussed here except in the briefest way. It was set in motion and has been kept in motion chiefly by Butler[25] who took a strong stand on the "identity" side in a paper he read in Manila in 1914. At that time he pointed out that the old tables of differential diagnosis for the two diseases were no longer valid. He cited cases of congenital yaws; of infants (of yaws parents) who had not had primary yaws but who showed positive Wassermann reactions; he called attention to the fact that yaws does produce the same visceral lesions that syphilis produces, that yaws and syphilis immunize against each other. One by one the objections of the "dualists" are being removed. By careful autopsy studies Choisser[26] has shown that the pathology (except for the early lesions) is identical for the

two diseases. Recent experimental work with animals, carried on by T. B. Turner and J. H. Chambers in Haiti, under a special grant from a private source in the United States, is expected to throw considerable light on the subject. The work of these two is yet unpublished.

The principal difficulty in the discussion would seem to arise from the lack of agreement as to just what constitutes identity or duality. Here are two diseases of somewhat different clinical and widely different epidemiological features, but caused by organisms which are indistinguishable, and producing pathological changes which are identical. Also the serology of the two is identical, and each disease immunizes against the other.

This problem has many analogies. We might recall here the controversy instituted by Goldberger in 1912 when he announced that Brill's disease and typhus were identical. He based his opinion almost entirely on his cross immunity experiments, but subsequent

work of other kinds confirmed his view, and even Brill was finally obliged to recognize the identity. The weight of the evidence at present indicates to most students of this question that there is probably no more difference between the organisms of yaws and syphilis than there is between the different strains of treponema which produce what might be called here "civilized syphilis."

## VIII

## HURRICANES

During the last two years Haiti was swept by two hurricanes, one meteorological; the other, political. One cannot say which of these wrought the more damage. Public Health and the Public Health Service were affected by both.

On August 10, 1928, homes and crops were completely destroyed over large areas of the Southern peninsula by the same hurricane which will be long remembered in Porto Rico and in Miami.

Immediate relief work and early rehabilitation measures were made possible by a fund of $200,000.00 voted by the government and a gift of $32,000.00 from the American Red Cross. It is highly significant that all the funds and the direction of the work were placed under the control of the Public Health Service. Since no other department of the government came into such close and cordial relations

with the people, the decision to assign this task to the Public Health Service was a fortunate one, resulting in a friendly and thorough cooperation from the people and some splendid accomplishments in the way of quick results.

Because of extremely low costs of labor and food in Haiti, these funds were sufficient for the performance of a quite handsome piece of work. Food was dispatched, seeds purchased and distributed, trails reconstructed, injured persons treated—all this was done in the amount and with the speed the situation called for. Within a few weeks the program of rebuilding homes in the hurricane-swept towns and villages of the south coast was well under way and was pushed to completion within a short time. Of course the work was greatly aided by the other government services and by committees of citizens of the towns affected.

The other storm had been brewing for more than a year and had gathered

FIG. 19. DISPENSARY (RIGHT) AND CHURCH DESTROYED BY HURRICANE AT ST. LOUIS DU SUD. (PHOTOGRAPH BY E. FERNQUIST, U.S.N. AND S.C.)

some alarming momentum by November, 1929. One could hear rumblings in 1928, and during 1929 many omens seemed to presage some foul political weather just as unmistakably as the forebodings of the 1790's and all the later periods had done. The political opponents of President Borno evidently thought they had reason to suspect that Borno did not intend to keep his promise of non-participation in the presidential election of 1930. They said he was secretly "choosing to run." They looked for some weak spots upon which to center their attack. They wanted to make some demonstrations, and in Haiti there is nothing so easily initiated as a demonstration.

In the Department of Agriculture they found some very fertile soil upon which to sow their seeds of trouble. That department had long been looked upon as what they called a *pointe névralgique* or sore spot. The students in the National College of Agriculture were exhibiting their disaffection over

a reallotment of scholarships (most of them were receiving pay for attendance at the school, and this reallotment reduced the sums received). They had other grievances, some of which were unquestionably sound and just; some of which were fancied and were being fostered by considerations quite beside the point. They objected to instructors who could not speak the language of the students. They objected to the high salaries of these instructors as compared to the lower salaries of Haitian instructors. They objected to the elaborate administrative elements of the department, which included the employment of several Americans who could be replaced, they claimed, by Haitians. The American and Haitian elements of the department, they said, could not understand each other, because of the differences in language and culture. They saw no purpose in or need for some of the more special divisions of the department which were headed by Americans. While they had great respect for some of the

FIG. 20. HURRICANE WRECKAGE AT AQUIN. (PHOTOGRAPH BY E. FERNQUIST, U.S.N. and S.C.)

Americans they strongly disliked certain others, and among these they particularly and personally disliked the American Director of the Department of Agriculture. This department also conducted the vocational schools and many rural farm schools. This control was felt by many to be an encroachment upon the purely Haitian Department of Education and much was written and said and thought on this aspect of the situation. Some of the Americans in these schools may have been a bit over-zealous, and their zeal was little understood or appreciated by most Haitians whose cultural background was quite out of harmony with the American attitude and viewpoint.

In November the agricultural students went on strike. The strike spread to other schools. Even the medical students, who had none of the grievances of the agricultural students, went on a "sympathetic" strike. They had no desire whatever for this action, but were drawn into the gen-

eral wave which was now sweeping the country.

Just at this time there occurred a critical drop in the Brazilian coffee market. The price of Haitian coffee was so depressed by the situation in Brazil that the income of nearly every Haitian was reduced to about one-third its former amount. Government revenues were reduced accordingly. Business of almost every kind was crippled or suspended. The peasants as well as many towns people were ready to believe anything or do anything. The opposition took advantage of this crisis and fomented strikes among government and other employees in all parts of the country.

The storm reached its peak on December 5th when a band of a few hundred (armed with machetes) entered Aux Cayes, unquestionably for the purpose of some large scale looting. When it was seen that the mob could not be turned from their purpose by any other means, more serious results were averted by the timely use of a

machine gun. Five of the mob were killed, about thirty wounded, and the entire crowd dispersed, all in the course of about two minutes.

The war was over. Peace and quiet prevailed. But intense feeling endured and will endure for a long time. These are mixed feelings, depending upon how one was affected by this storm—feelings of great regret, remorse, sadness, bitterness, hatred, vengeance. Mixed feelings, but they run deep and they run high in Haiti.

Embarrassed by the financial condition of the government following the coffee market depression, and embarrassed in many intangible ways by the political disturbances, the Public Health Service was obliged to curtail certain activities and to suspend parts of its program of future developments. But it weathered the storm well. The medical school reopened and the work in all departments eventually was resumed with renewed force, although it was limited in some respects by financial considerations.

## IX

## THE HAITIAN DOCTORS

Intimate association and unrestrained discourse with Haitian doctors lead one to the opinion that they possess certain well defined and very laudable capabilities. One is also led to the conclusion that in the Haitian profession there is a pronounced and quite characteristic lack of capability in or promise of development in certain directions.

They are capable of acquiring knowledge and skill, and, in general, they are the equal of other races both in their ability to acquire this skill and knowledge and in their ability to apply it to many practical problems. This ability constitutes one of their most fortunate and admirable traits.

But the aspects of medical endeavor in which they are lacking are, unfortunately, aspects very essential to the successful execution of any national public health program.

Fig. 21. National Medical School, Port au Prince.

They have never shown any ability in organization and administrative activities. This may be due in large part to the fact that organization involves subordination. They are very disinclined to recognize superior authority in members of their own race; a Haitian resents subordination to another Haitian of a different shade (either lighter or darker, but especially when darker than his own) and tradition does not permit subordination to any one of a lower social caste (this situation frequently arises in hospital and public health administration). For example, a nurse, interne, or junior physician could not take orders from a physician of superior authority unless the latter's family occupied a superior social position. In such a circumstance the order would have to be transmitted through some person of acceptable caste. Complete subordination could be possible only when the superior authority is white. In the event of withdrawal of the Occupation, central public health au-

thority in the hands of one Haitian or a small group of Haitians could be nominal only. It could not be actual. Thus, there will be almost immediately after the withdrawal, if such withdrawal is complete, a very radical decentralization of the structure of the Public Health Service. Work of a commendable order is now being performed by Haitians in charge of certain local public health activities (sanitation as well as hospital activities). They could continue in this work, but would be limited at all points where the support and cooperation of a central organization are required.

They are lacking in what might be termed "medical conscience." They have little or no consciousness of what we call medical ethics. It is doubtful whether either the spirit or practice of medical ethics could be developed in them. Such things as devotion, sacrifice, human sympathies, moral obligations to one's patients or colleagues, as we find them in medical practice in America, do not exist in

Haiti. There are possibly a few exceptions to this principle, but they are rare, and can be found (almost) only among the younger generation.

A third lack is perhaps the most striking one. Their lack of the scientific viewpoint is absolute. Investigative work on a true scientific basis is apparently not possible for Haitians. Procedures of simple trial-and-error are possible, but Haitians are scarcely inclined to use even those procedures. They are content to accept empiricism and authority in medicine. Originality, a scientific approach, scientific ideals, scientific observations and interpretations, carefully planned and controlled experiments—these are not possible. Their attempts in this field have been of a puerile sort. While it is true that they have never, until very recently, received any training in the basic sciences, there seems little reason to hope for their development in them, even though they be provided with such training.

Since 1926 the internship system has provided a large amount of modern clinical teaching, but it is doubtful if this internship system would or could continue under a strictly Haitian administration. Also, since 1927 the foreign fellowships have doubtless been of great assistance in modernizing medical education in Haiti. But, unfortunately, the control and administration of the medical school will rest in the hands of political appointees after the withdrawal of the occupation, and these men will be guided by political considerations to the exclusion of everything else.

Another serious handicap to a national public health program will present itself at the expiration of the Occupation. This difficulty arises from the traditional refusal of Haitian physicians to go into the rural districts (except under the pressure of "white" administration). It will result in the collapse of the present rural clinic progam.

The rural clinic program is practically the backbone of the Public

Health Service. Haiti's wealth lies in agricultural production, and this depends upon the health of the mountain peasants. More strictly, it depends upon the dissemination of treatment for yaws. Yaws treatment, as well as the less important treatment for malaria and for worm infestations, is not accessible to the mass of peasants unless brought to them in the form of rural clinics. Assuming the impossible, assuming that Haitians would attempt to operate these rural clinics, their value would be almost entirely nullified by the refusal of the peasants to attend the clinics unless they are supervised by white physicians. An inclination on the part of Haitian physicians to conduct these clinics, and confidence in them when so conducted on the part of the peasants may conceivably be developed in the course of years; but there are no indications that either this inclination or this confidence will appear in the near future.

These principles are no mere presumptions. Their chief confirmation

lies in the opinions held by Haitians. They have a keen insight into their own shortcomings and difficulties, and do not hesitate to discuss them openly and frankly with persons who have their confidence and speak their languages. Despite their great personal pride and vanity they are free to discuss and joke about these matters when they can speak of them in racial or national—not personal or individual—terms. Noteworthy among events of the last three years are the annual conventions of the Haitian Medical Society. The first such convention was held in May, 1927. These conventions last several days, and are opened with an address by the President of the Republic. Papers, usually on problems of local importance, are read by Haitian and American members of the Society; clinics are held; visits are made to various sanitary engineering projects about the city of Port au Prince; and the session is ended by an elaborate banquet. These banquets are sights the like of which can

not be seen elsewhere in the world. The convention brings together medical men, black and white, from all parts of the Republic, and to see some 30 white doctors dining and drinking at the banquet table, amicably and convivially, amongst some 50 black doctors, is a matter which will furnish food for contemplation to those who think it can not or should not be done. These black men are gentlemen in every sense that we might claim or hope to be; they surpass us in the little matters of *politesse* which they have acquired from Parisian residence or from each other. Many of them are clinicians and surgeons of a high order. While mutual courtesy and deference prevail at these banquets, there is nothing stiff or solemn about them. On the contrary, as the evening progresses and the champagne flows, hilarity quite naturally increases, and those of whatever shade of complexion who may have been a little color-sensitive seem to become totally color-blind in this atmosphere.

The viewpoint of the Haitian doctor has undergone great changes these last twelve years. There is a small group of irreconcilables but they are no longer a drop in the bucket. The others can see the non-commercial side of medicine and realize that from the nature of things in Haiti, progressive scientific medicine can survive there only as state medicine or something closely allied to state medicine. They can all see that the big medical problems of that country are largely public health problems and must be met and thought of in terms of public health. They see the importance and significance of such research problems as that of the yaws-syphilis relationship, and just as we know what a large part malaria played in the decadence of Greek culture, they know that malaria and yaws and hookworm must have had a great deal to do with the backwardness that their nation has shown.

The Haitian doctor of the nineties and early nineteen hundreds was

usually pretty much of a boulevardier (had there been any boulevards), emaculately attired, often adorned with a monocle and spotless white gloves, and usually carrying a silver headed cane. He had a ponderous air and perfect bedside manners. Now he is being rapidly replaced by such types as Hyppolite, Valmé, Séide, and L'herisson, all plain, serious, quiet, studious young men more concerned with practical medical problems than with boulevard manners or the cut of their clothes.

When the Occupation retires, some great changes are certain to occur. Every one in Haiti knows that these changes will follow very quickly upon the Occupation's departure. Some of these changes may be for the better, many of them will surely be for the worse. They will not be as radical or as extensive as those that took place in 1804 when the republic was formed, but they will bear certain resemblances to those changes.

Perhaps some strong men will appear. Perhaps some Haitians will appear who will have the power and wisdom to maintain peace and order for a time. Perhaps they can even stimulate some progress in certain directions. Perhaps there will appear some Haitian with the ideals and devotion of a Toussaint Louverture, or the strength and industry of a Christophe, or the patience and skill of a Boyer.

Perhaps some Haitian doctors will work for Haitian medicine—perhaps some Dehoux will maintain the present standards of the medical school; perhaps another Audain will advance the scientific standing of the profession.

The whole trouble is that the best and most able Haitians will keep out of politics and political jobs and will have little if any dealings with the government. They will be too preoccupied in their own private affairs to meddle with such a dangerous and unsavory business;—they will not wish

to enter a field which in America would be called a "racket."

Perhaps the occupation has been too zealous; perhaps it has been attempting to install a high-powered motor in an ox-cart not built to stand the strain or the speed.

American efficiency is one thing, Haitian culture is another.

## References


1. Roux, C. F. Topographie Médicale de San Domingo. Venice, 1807.
2. Frère Archange. Manuel D'Histoire D'Haiti, Frères de l'Instruction Chretienne. Port au Prince, 1925.
3. Stitt, E. R. Our disease inheritance from slavery. *U. S. Nav. M. Bull.*, 26:801, 1928.
4. de Saint-Mèry, Moreau. Description Topographique, Physique, Civile, Politique et Histoirique de la Partie Française de Saint Domingue. Phila., 1797.
5. Butler, C. S. The medical needs of Haiti at the present time. *U. S. Nav. M. Bull.*, 24:269, 1926.
6. Sydenham, T. Opera Medica. Lond., Sydenham Soc., 1850.
7. Hirsch, A. Handbook of Geographical and Historical Pathology. Trans. from German Ed. 2. New Sydenham Soc., Lond., 1883.
8. Pouppé-Desportes. Médicine Domestique de Saint Domingue. Paris, 1802.
9. Ducoeur, J. S. Manuel des Habitants de Saint Domingue. Paris, 1802.
10. Chevalier, J. D. Maladies de Saint Domingue. Paris. 1802.
11. Wilson, P. W. Report of malaria and microfilaria survey of 11,000 laborers,

in Haiti and 2007 children. *U. S. Nav. M. Bull.*, 27:87, 1929.

12. Clark, H. C. Spleen and parasite rates as measures of malaria in the Caribbean area. *Am. J. Trop. Med.* 8: No. 5, 1928.
13. Poissonier Desperrières. Traité des Fièvres de l'Ile de Saint Domingue. Paris, 1766.
14. Léon, R. La Pratique Médicale à Saint Domingue. Paris, Presses Modernes, 1928.
15. Dazille, J. B. Observations Générales sur les Maladies des Climats Chauds, leurs Causes, leur Traitement et les Moyens de les Prevenir. Paris, 1785.
16. Descourtilz. Guide Sanitaire des Voyageurs aux Colonies. Paris, 1816.
17. Vandercook, J. W. Black Majesty. N. Y., Harper, 1928.
18. Payne, G. C. Report of the Haiti Survey. A report of health conditions in Haiti, report to the Rockefeller Foundation, 1925.
19. Mann, W. L. Further remarks upon an edema disease in Haiti. *Mil. Surgeon*, 55:297, 1924.
20. Payne, G. C. Edema among children in Haiti. A supplement to the report of the Haiti survey. See reference 18.
21. Wickersham, W. W. Edema disease among Haitian prisoners. *U. S. Nav. M. Bull.*, 27:69, 1929.

22. Butler, C. S. and Parsons, R. P. Effect of mass treatment on the epidemiology of Treponematosis. *Am. J. Syph.*, 11:228, 1927.
23. Wilson, P. W. The frontal attack on yaws—a plea for a change in strategy. *U. S. Nav. M. Bull.*, 28:1, 1930.
24. Wilson, P. W. and Mathis, M. S. Observations on the epidemiology and pathology of yaws. *J. A. M. A.*, 94:1289, 1930.
25. Butler, C. S. Some facts and fancies regarding the unity of yaws and syphilis. *U. S. Nav. M. Bull.*, 8:561, 1914.
26. Choisser, R. M. Pathology in the tropics. *U. S. Nav. M. Bull.*, 27:551, 1929.

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